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E Kaltenthaler,[1*] J Brazier,[1] E De Nigris,[1] I Tumur,[1] M Ferriter,[2] C Beverley,[1] G Parry,[1] G Rooney[1] and P Sutcliffe[1]

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Abstract

Computerised cognitive behaviour therapy for depression and anxiety update: a systematic review and economic evaluation

E Kaltenthaler,[1*] J Brazier,[1] E De Nigris,[1] I Tumur,[1] M Ferriter,[2] C Beverley,[1] G Parry,[1] G Rooney[1] and P Sutcliffe[1]

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Objectives: To evaluate computerised cognitive behaviour therapy (CCBT) for the treatment of anxiety, depression, phobias, panic and obsessive–compulsive behaviour (OCD). The software packages to be considered include Beating the Blues (BtB), Overcoming Depression: a five areas approach, FearFighter (FF), Cope and BT Steps. Other packages or programmes incorporating CCBT were also considered.

Data sources: Electronic databases from 1966 to March 2004. Evidence submitted by sponsors for CCBT products.

Review methods: A systematic review was performed to identify all studies describing trials of CCBT. The cost-effectiveness assessment included a review of the literature and the evidence submitted by sponsors for each of the products. A series of cost-effectiveness models was developed and run by the project team for the five CCBT products across the three mental health conditions.

Results: Twenty studies were identified in the clinical effectiveness review. The analysis of these results showed some evidence that CCBT is as effective as therapist-led cognitive behaviour therapy (TCBT) for the treatment of depression/anxiety and phobia/panic and is more effective than treatment as usual (TAU) in the treatment of depression/anxiety. CCBT also appears to reduce therapist time compared with TCBT. When reviewing cost-effectiveness studies, only one published economic evaluation of CCBT was found. This was an economic evaluation of the depression software BtB alongside a randomised controlled trial (RCT), which found that BtB was cost-effective against TAU in terms of cost per quality-adjusted life-year (QALY) (less than £2000), however it contained weaknesses that were then addressed in the cost-effectiveness model developed for the study.

The results of the model for the depression software packages in terms of incremental cost per QALY compared with TAU and the chance of being cost-effective at £30,000 per QALY were for BtB £1801 and 86.8%, for Cope £7139 and 62.6% and for Overcoming Depression £5391 and 54.4%. The strength of the BtB software being that it has been evaluated in the context of an RCT with a control group. The subgroup analysis found no differences across the severity groupings. For phobia/panic software, the model showed an incremental cost per QALY of FF over relaxation was £2380. Its position compared with TCBT is less clear. When modelling OCD packages, using the practice-level licence cost meant that BT Steps was dominated by TCBT, which had significantly better outcomes and was cheaper. However, the cheaper PCT licence resulted in the incremental cost-effectiveness of BT Steps over relaxation being £15,581 and TCBT over BT Steps being £22,484.

Conclusions: The study findings are subject to substantial uncertainties around the organisational level for purchasing these products and the likely throughput. This is in addition to concerns with the quality of evidence on response to therapy, longer term outcomes and quality of life. The position of CCBT within a stepped care programme needs to be identified, as well as its relationship to other efforts to increase access to CBT and psychological therapies. Research is needed to compare CCBT with other therapies that reduce therapist time, in particular bibliotherapy and to explore the use of CCBT via the Internet. Independent research is needed, particularly RCTs, that examine areas such as patient preference and therapist involvement within primary care.

Contents

Glossary and list of abbreviations

Technical terms and abbreviations are used throughout this report. The meaning is usually clear from the context, but a glossary is provided for the non-specialist reader. In some cases, usage differs in the literature, but the term has a constant meaning throughout this review.

Glossary

Bibliotherapy Cognitive behaviour therapy provided in a printed format, such as a book.

Cognitive behaviour therapy (CBT) refers to the pragmatic combination of concepts and techniques from cognitive and behaviour therapies common in clinical practice.

Computerised cognitive behaviour therapy CBT delivered via a computer interface or over the telephone with a computer-led response. The computer program is interactive, making appropriate responses to patient input.

Homework Tasks set for patients to complete in their own time. The tasks may be set either by the CCBT package or by the patients.

TCBT Therapist-led CBT delivered by a clinician. It can be delivered by a number of different clinically trained professionals, using different protocols and numbers of sessions, and be provided in a range of possible settings.

List of abbreviations

ACQ	Agoraphobic Cognitions Questionnaire
ADIS	Anxiety Disorders Interview Schedule
AfW	Assembly for Wales
AIC	academic in confidence
AR	applied relaxation
ASQ	Attributional Style Questionnaire
ATQ	Automatic Thoughts Questionnaire
BAI	Beck Anxiety Inventory
BAT	Behavioural Assessment Test
BDI	Beck Depression Inventory
BHS	Beck Hopelessness Scale
BSQ	Body Sensations Questionnaire
BtB	Beating the Blues
CACBGT	computer-augmented behavioural group therapy

continued

List of abbreviations *continued*

CACBT	computer-augmented behavioural therapy
CASP	Critical Appraisal Skills Programme
CAVE	Computer-aided Vicarious Exposure
CBGT	cognitive behaviour group therapy
CBT	cognitive behaviour therapy
CCBT	computerised cognitive behaviour therapy
CEAC	cost-effectiveness acceptability curve
CESDP	Center for Epidemiologic Studies Depression Scale
CGI	clinician global impression
CI	confidence interval
CIDI	Composite International Diagnostic Interview
CMHT	community mental health team
CORE-OM	Clinical Outcomes in Routine Evaluation – Outcome Measure
CRI	Coping Responses Inventory
CSAG	Clinical Standards Advisory Group
df	degrees of freedom
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders-IV
EQ-5D	EuroQol 5 Dimensions
ES	effect size
ESb	between-group effect size
ESEMeD	European Study of the Epidemiology of Mental Disorders
ESw	within-group effect size
FF	FearFighter
FQ	Fear Questionnaire
FU	follow-up
GAD	generalised anxiety disorder
GHQ	General Health Questionnaire
HADS	Hospital Anxiety and Depression Scale
HAM-D (or HRSD)	Hamilton Rating Scale for Depression
HUI	Health Utility Index
ICD-10	International Classification of Diseases-10
IPT	interpersonal therapy
ITT	intention-to-treat
IVR	interactive voice response
LGE	live graded exposure
MA	Managing Anxiety
MADRS-SR	Montgomery Åsberg Depression Rating Scale
MI	Mobility Inventory for Agoraphobia
NA	not applicable
NHS EED	NHS Economic Evaluations Database
NICE	National Institute for Health and Clinical Excellence
NR	not reported

continued

List of abbreviations *continued*

ns	not significant
NSF	National Service Framework
OCD	obsessive–compulsive disorder
ODIN	Overcoming Depression on the Internet
OHE HEED	Office of Health Economics Health Economic Evaluations Database
OPCS	Office of Population Censuses and Surveys
PASA	Purchasing and Supply Agency
PCT	primary care trust
PD	panic disorder
PDT	psychodynamic therapy
PGI	patient global impression
PMR	progressive muscle relaxation
PSA	probabilistic sensitivity analysis
PT	Phobic Targets
PTSD	post-traumatic stress disorder
QALY	quality-adjusted life-year
QOLI	Quality of Life Inventory
QWB	Quality of Well-Being
RCT	randomised controlled trial
SASS	Social Adaptation Self-Evaluation Scale
SCID	Structured Clinical Interview for DSM-IV
SD	standard deviation
SF-12	Short Form 12
SF-36	Short Form 36
SPQ, SQ	Spider Questionnaire
SRI	serotonin reuptake inhibitor
SSRI	selective serotonin reuptake inhibitor
ST	supportive therapy
SUDS	Subjective Units of Distress Scale
TA	treatment acceptability
TAR	technology assessment report
TAU	treatment as usual
TCA	tricyclic antidepressant
TCBT	therapist-led cognitive behaviour therapy
TCS	Treatment Credibility Scale
TH	treatment helpfulness
TLP	Therapeutic Learning Program
WARS	Work and Adjustment Rating Scales
WLC	waiting list control
WSA	Work and Social Adjustment
YBOCS	Yale–Brown Obsessive Compulsive Scale

All abbreviations that have been used in this report are listed here unless the abbreviation is well known (e.g. NHS), or it has been used only once, or it is a non-standard abbreviation used only in figures/tables/appendices in which case the abbreviation is defined in the figure legend or at the end of the table.

Note

Confidential information was removed from this version of the report but was considered by the appraisal committee of the National Institute for Health and Clinical Excellence.

Executive summary

Background

Depression, anxiety, phobias and panic are common mental disorders usually treated within a primary care setting. Obsessive–compulsive disorder (OCD) is less common but, as with the other disorders, is associated with considerable occupational and interpersonal impairment. Medication is usually the first treatment offered, but is often associated with side-effects. There is substantial evidence to support the use of cognitive behaviour therapy (CBT) in the treatment of these disorders. However, access is limited owing to too few therapists, expense, waiting lists and patients' reluctance to enter therapy. Computerised cognitive behaviour therapy (CCBT) is a self-help option that offers patients the potential benefits of CBT with less therapist involvement.

Description of proposed service

This report evaluates CCBT for the treatment of anxiety, depression, phobias, panic and OCD.

Objective

The overall aim of the review is to update the National Institute for Health and Clinical Excellence (NICE) guidance on the clinical and cost-effectiveness of CCBT delivered alone or as part of a package of care compared with current standard treatments for depression and anxiety (including phobias). In addition, OCD will be included in this review. The software packages to be considered include Beating the Blues (BtB), Overcoming Depression: a five areas approach, FearFighter (FF), Cope and BT Steps. Other packages or programs incorporating CCBT will also be considered. More specifically, the review of CCBT aims to:

- evaluate clinical effectiveness in terms of improvement in psychological symptoms
- evaluate effectiveness in terms of interpersonal and social functioning
- evaluate effectiveness in terms of quality of life
- evaluate effectiveness in terms of preference, satisfaction and acceptability of treatment
- evaluate cost-effectiveness in comparison with current standard treatments
- estimate the possible overall cost in England and Wales.

Methods

Clinical effectiveness

A systematic review of the literature was performed to identify all studies describing trials of CCBT delivered either alone or as part of a package and either via a computer interface or over the telephone with a computer-led response. Databases were searched from 1966 to March 2004.

Cost-effectiveness

The cost-effectiveness assessment was in two parts. The first was a review of the literature and the evidence submitted by sponsors for each of the products. The second was the development of cost-effectiveness models of the five products across the three mental health conditions.

Results

Number and quality of studies

Clinical effectiveness

Twenty studies (including two academic in confidence) met the inclusion criteria for depression/anxiety and phobia/panic, ten of which included software packages and ten were other studies of CCBT. With regard to the included software package studies, four of the ten were RCTs. Of the ten other studies included in the review, nine were RCTs and one was a pseudorandomised trial. An additional two studies of CCBT as a treatment adjunct for therapist-led cognitive behaviour therapy (TCBT) were also identified.

Four studies of CCBT for OCD were identified, two of which were randomised controlled trials (RCTs), and all of which were studies of the included package, BT Steps.

Cost-effectiveness

The review of published studies identified one economic evaluation of CCBT. The only relevant

study was also included in the submission of Ultrasis for BtB. This was a cost-effectiveness analysis undertaken alongside a randomised clinical trial of BtB compared with treatment as usual (TAU). This study was well conducted and had good internal validity. It estimated the cost per quality-adjusted life-year (QALY) to be £1250. However, the assumed cost of intervention was based on unrealistically high throughput numbers, the derivation of QALYs was weak and the trial was limited to 8 months.

The other packages only submitted information on the costs of their products and this was used in the economic modelling.

Evidence of effectiveness

Clinical effectiveness

Depression/anxiety

Ten studies of CCBT for depression were included in this review, six of the included software packages and four other studies. Three studies of BtB were included, two for Cope and one for Overcoming Depression. Two of these were RCTs. One found BtB to be more effective than TAU. Both the Cope studies and the Overcoming Depression study had no comparator, but showed improvement in symptoms of depression from baseline.

Four other studies of depression were included in this review, three of which were RCTs and one was pseudorandomised. Two studies compared CCBT with an information website. One found CCBT to be ineffective, and one found both to be effective. The fourth study compared CCBT with a waiting-list control and found CCBT to be effective.

Phobia/panic

Ten studies of CCBT for phobia/panic were included in this review, including four for FF. Of these four, two were RCTs, one showing both FF and TCBT to be effective and both more effective than relaxation. The other FF RCT compared FF with another CCBT package and found both CCBT packages to be effective. The other two FF studies were non-randomised studies. One compared CCBT with an historical cohort receiving TCBT and found both to be effective and the other compared two delivery methods of FF (Internet versus clinic computer) and found that both groups improved.

With regard to the six other studies included for phobia and panic, all were RCTs. Three of these studies showed CCBT to be more effective than a waiting-list control, somewhat less effective than relaxation and slightly less effective than TCBT. Of the final three studies, of Computer-aided Vicarious Exposure (CAVE) for treatment of spider phobia, one found both three and six sessions of CCBT to be effective, the second found TCBT (single session) to be more effective than CCBT (single session) and a waiting-list control, and the final study showed CCBT, TCBT and relaxation to be effective.

OCD

Four studies of OCD, all for BT Steps, were included in the review. One of these was an RCT using TCBT and relaxation as comparators. In this trial, TCBT was significantly more effective than BT Steps, although both groups improved significantly from baseline and both were more effective than relaxation. In the other RCT, schedule support was more effective than on-demand support. Finally, in the two non-comparative trials less than half of patients who completed treatment using BT Steps improved from baseline.

Therapist time

Three studies gave no information regarding therapist time. Two studies reported no direct contact, with all contact being via the Internet, and the other studies reported from 5 minutes to 115 ± 44 minutes.

Cost-effectiveness

Cost-effectiveness models were constructed of the five products. These models were based partly on sponsors' submissions, but also on the advice of local experts and using evidence on key parameter values (such as throughput, utility values and costs) from other published sources. The results are presented as a series of incremental cost per QALY ratios and associated cost-effectiveness acceptability curves for each product under a range of purchasing scenarios.

Depression

The three products share the same basic model structure of a decision tree model comparing two arms: CCBT and TAU over an 18-month period. The BtB model was able to use the individual level results of the RCT and simply extend the benefits by another 10 months by making assumptions about relapse rates taken from the literature on CBT. The costs of the intervention were estimated using more realistic assumptions about likely throughput than the submission. For practice-based licences, the overall intervention costs per patient were £219.30 for BtB, £195.86 for Cope (with practice-provided

Internet access and £170.30 without) and £72.64 for Overcoming Depression. For PCT-based licences the costs fell to £104.62, £110.53 and £66.64, respectively.

The results in terms of incremental cost per QALY compared with TAU and chance of being cost-effective at £30,000 per QALY for BtB were £1801 and 86.8%, for Cope were £7139 and £62.6%, and for Overcoming Depression were £5391 and 54.4%. It is difficult to compare across products, given that there have been no head-to-head comparisons and the main clinical studies were undertaken on different populations. However, the strength of BtB lies in the fact that it has been evaluated in the context of an RCT with a control group. For this reason there is less uncertainty around the cost-effectiveness of BtB. The subgroup analysis found no differences in cost-effectiveness across the severity groupings.

[Commercial-in-confidence information has been removed.]

Phobia/panic
FF was compared with TCBT and relaxation. TCBT is equivalent to standard therapist-led CBT and was designed to consist of six hourly sessions. Relaxation involved around 1 hour of contact time with a trained behavioural therapist. The economic model is a four-cycle discrete-state Markov model lasting for 12 months and each cycle length is 3 months. The overall intervention cost of FF was £195.86 (with practice Internet access and £171.30 without) and £110.53 for a primary care trust (PCT) licence. The incremental cost per QALY of FF over relaxation was £2380. Its position compared with TCBT is less clear. Although one trial found TCBT to be more effective than FF, this difference was neither significant nor consistent across outcome measures. Assuming that this was a significant difference, the incremental cost per QALY of TCBT over FF was £17,608, but the probability of being cost-effective at £30,000 per QALY was just 61%. The main limitations of this model are that the effectiveness results were based on a small trial, the linkage of outcome to QALYs was indirect and the assumed throughput levels were uncertain.

OCD
Cost-effectiveness was assessed using a decision tree model with three arms: BT Steps, TCBT and relaxation. TCBT consisted of 11 weekly 1-hour sessions to negotiate self-exposure homework. Relaxation therapy patients were asked to perform relaxation exercises on a daily basis for 10 weeks. The intervention cost of BT Steps per patient has been estimated to be £837.23 for a practice-based licence with practice access to the Internet and £719.49 with no access to the Internet in general practice. A PCT licence is much cheaper at £248.83, assuming that it can achieve the same levels of throughput per practice. Using the practice-level licence cost meant that BT Steps was dominated by TCBT, which had significantly better outcomes in one trial and was cheaper. However, the cheaper PCT licence resulted in BT Steps costing less than the more effective TCBT. At the lower cost the incremental cost-effectiveness of BT Steps over relaxation was £15,581 and of TCBT over BT Steps was £22,484. The cost-effectiveness of BT Steps depends crucially on the licence and the throughput achieved per licence.

Conclusions

Clinical effectiveness

There is RCT evidence to support the effectiveness of BtB and FF. There is no RCT evidence for Cope and Overcoming Depression. Evidence from the one RCT of BT Steps suggests that it is less effective than TCBT, but patients improved significantly from baseline.

- There is some evidence that CCBT is as effective as TCBT for the treatment of phobia/panic.
- There is some evidence that CCBT is more effective than TAU in the treatment of depression/anxiety.
- In studies reporting accurate estimates of therapist time, CCBT appears to reduce therapist time compared with TCBT and is therefore of use where access to TCBT is limited.
- CCBT is not as effective as TCBT in OCD.

Cost-effectiveness

Reviews

There was only one published economic evaluation of CCBT, which was an economic evaluation of BtB alongside an RCT. It concluded that BtB was cost-effective against TAU in terms of cost per QALY (less than £2000). It had a number of weaknesses that were addressed in the model. The submissions contained some cost data, but no other cost-effectiveness studies.

Depression
The results in terms of incremental cost per QALY compared with TAU and the chance of being cost-effective at £30,000 per QALY for BtB were £1801 and 86.8%, for Cope were £7139 and 62.6% and for Overcoming Depression were £5391 and 54.4%. The strength of BtB lies in the fact that it has been evaluated in the context of an RCT with a control group. The subgroup analysis found no differences across the severity groupings.

[Commercial-in-confidence information has been removed.]

Phobia/panic
The incremental cost per QALY of FF over relaxation was £2380. Its position compared with TCBT is less clear.

OCD
Using the practice-level licence cost meant that BT Steps was dominated by TCBT, which had significantly better outcomes and was cheaper. However, the cheaper PCT licence resulted in the incremental cost-effectiveness of BT Steps over relaxation being £15,581 and TCBT over BT Steps being £22,484.

These conclusions are subject to substantial uncertainties around the organisational level for purchasing these products and the likely throughput. This is in addition to concerns with the quality of evidence on response to therapy, assumptions about longer term outcomes and quality of life.

Recommendations for research

Further research priorities include the following:

- The position of CCBT within a stepped care programme needs to be identified, as well as its relationship to other efforts to increase access to CBT and psychological therapies.
- Research is needed to compare CCBT with other therapies that reduce therapist time, in particular bibliotherapy.
- Further research is also needed to explore the use of CCBT via the Internet.
- Research needs to be carried out by independent researchers. Research should be carried out by those who are not associated with commercial or product gains.
- Studies of CCBT should be RCTs and need to include an intention-to-treat analysis to take into account patients who drop out of trials. The reasons for withdrawal from trials need to be identified as these relate directly to patient preference.
- Patient preference should be addressed in the trial design. Two possibilities are the inclusion of qualitative research methods and the use of patient preference trials.
- Research is needed to determine the level of therapist involvement needed when using CCBT programs to produce optimal outcomes.
- Studies need to be undertaken within the GP setting, as this is where most patients with anxiety, depression and phobias are treated.
- Efforts should be made to include patients with co-morbidities routinely treated within primary care.

Chapter 1

Aim of the review

The overall aim of the review was to update the National Institute for Health and Clinical Excellence (NICE) guidance on the clinical and cost-effectiveness of computerised cognitive behaviour therapy (CCBT) delivered alone or as part of a package of care as compared with current standard treatments for depression and anxiety (including phobias). In addition, obsessive–compulsive disorder (OCD) was included in this review. The software packages to be considered include Beating the Blues (BtB), Overcoming Depression, FearFighter (FF), Cope and BT Steps. Other packages or programs incorporating CCBT were also considered. More specifically, the review of CCBT aimed to:

- evaluate clinical effectiveness in terms of improvement in psychological symptoms
- evaluate effectiveness in terms of interpersonal and social functioning
- evaluate effectiveness in terms of quality of life
- evaluate effectiveness in terms of preference, satisfaction and acceptability of treatment
- evaluate cost-effectiveness in comparison with current standard treatments
- estimate the possible overall cost in England and Wales.

Chapter 2
Background

Description of underlying health problem

At any one time approximately one in six people of working age has a mental health problem, most often anxiety or depression.[1] Most people with mental health problems who seek help are cared for by their GP together with the primary care team. For every 100 individuals who consult their GP with a mental health problem, nine will be referred to specialist services for assessment and advice or for treatment.[1]

The Office of Population Censuses and Surveys (OPCS) Psychiatric Morbidity Survey (1995)[2] found prevalence rates (per 1000 population) for mixed anxiety and depression of 77 in England and 70 in Wales, for generalised anxiety disorder (GAD) of 31 in England and 40 in Wales, for a depressive episode of 21 in England and 24 in Wales, and for panic disorders of nine in England with no data reported for Wales. For all phobias, prevalence rates were 11 for England and ten for Wales. Prevalence rates for OCD were 11 for England and 26 for Wales. Estimates in Britain for community prevalence of anxiety disorders are 5%, with over two million sufferers. However, only a small minority actually undergo treatment.[3]

Depression

Depression is associated with long suffering, suicide, occupational impairment and impairment in interpersonal and family relationships.[4] It has been estimated that up to 50% of attenders at primary care level present with some symptoms of depression, although depression is often undiagnosed.[5] Patients may not seek treatment for depression for several reasons, including failure to recognise symptoms, underestimation of the severity, limited access to services or reluctance to see a mental healthcare specialist because of stigma. Patients may be unwilling to comply with taking medication or to comply with psychological therapies and for these reasons may also not seek treatment. GPs may not diagnose up to 50% of depression or anxiety disorders, particularly where the patient complains of somatic rather than psychological symptoms.[6]

There are two main depressive syndromes, major and minor.[7] A multinational study of depression found that the symptoms most commonly reported from seven countries were insomnia, loss of energy and thoughts of suicide for major depression.[8] *Table 1* shows the criteria for a major depressive episode. A minor depressive episode, in contrast, is diagnosed when a patient has only three or four of the symptoms described in *Table 1*.

Two comprehensive guides frequently used for the diagnosis of mental disorders are the *Diagnostic and statistical manual of mental disorders* (DSM-IV),[10] and the *International statistical classification of diseases and related health problems – 10th revision* (ICD-10).[11] DSM-IV was developed by the American Psychiatric Association, while the ICD-10 is the comparable European guide for diagnosis of mental disorders. Both are used by psychiatrists, psychologists, social workers and other mental healthcare providers to understand

TABLE 1 *Diagnostic criteria for a major depressive episode*[9]

1. Depressed mood or
2. Loss of pleasure or interest
3. At least four (or three if both 1 and 2 are present) additional symptoms:
   - Increase or loss of appetite or significant weight gain or loss when not trying to lose weight
   - Insomnia or hypersomnia
   - Psychomotor retardation or agitation (observable by others)
   - Fatigue or loss of energy
   - Feelings of worthlessness or excessive/inappropriate guilt
   - Diminished ability to think, concentrate or make simple decisions
   - Recurrent thoughts of death, passive or active suicidal ideas
4. Duration of at least 2 weeks with the above symptoms being present most of the time, nearly every day
5. Symptoms are distressing and/or interfere with functioning

and diagnose mental health problems. DSM-IV lists over 200 mental health conditions and the criteria required to make an appropriate diagnosis. According to the DSM-IV, an episode of major depression involves symptoms (see *Table 1*) being evident for at least 2 weeks. Other disorders with similar symptoms or subtypes of major depressive disorder include dysthymic disorder, bipolar disorder, bereavement, adjustment disorder with depressed mood, seasonal affective disorder, and postpartum depression.[12]

Women consistently have higher rates of depression than men although this changes over the age of 55.[13] However, men have higher rates of suicide at all ages. The mean onset of major depression is in the late twenties. Deprivation is associated with higher prevalence rates of depressive symptoms in a community, with variations in prevalence related to indices of deprivation.[14] Although depression can occur at any point in a life cycle, many elderly patients with depression remain untreated. In examining a large cohort of depressed elderly patients in the Longitudinal Aging Study Amsterdam, the prognosis of late-life depression in the community was poor.[15] There is little evidence concerning the effectiveness of treatment for elderly people in primary care, especially in people with mild forms of depression. There is a need for studies examining the efficacy of non-pharmacological treatment with elderly patients, since they frequently take more medication, which can lead to contraindications for antidepressant use.[16]

Depression is also associated with physical illness and some studies have shown that healthcare costs for depressed patients are substantially more than for non-depressed patients.[14]

Depression is associated with considerable economic burden. The early recognition and treatment of depression is important, since research has shown that the prognosis for disorders of depression is poor, with rates of relapse and recurrence being high.[17]

Anxiety

Anxiety disorders are recognised as one of the most prevalent diagnostic mental disorder groups.[18] Anxiety syndromes are frequent in primary care and are associated with a clinically significant degree of severity and substantial psychosocial disability.[19] The OPCS Surveys of Psychiatric Morbidity[20] define generalised anxiety disorder by four criteria including duration greater than 6 months, presence of free floating anxiety, autonomic overactivity and an overall anxiety score of 2 or more (including heart racing, hands sweating, feeling dizzy and difficulty getting breath). Panic is diagnosed when criteria for phobic disorders are not met and the patient has had recent panic attacks, is anxiety free between attacks and has an overall panic score of 2 or more symptoms (frequency, duration and severity of symptoms are used in scoring).[20]

Symptoms of depression and anxiety more often than not coexist.[14] Studies of the prevalence of depression and anxiety disorders have shown that there is a high prevalence of co-morbidity of these two disorders.[8] One study of over 20,000 individuals in the USA[18] found 47.2% of those meeting lifetime criteria for major depression to have also met criteria for a comorbid anxiety disorder. 25.6% had a lifetime prevalence of simple phobia, 20.4% had agoraphobia, 13.6% had social phobia, 13.0% had panic disorder and 14.4% had OCD.[18] The average age of onset of any lifetime anxiety disorder (16.4 years) and social phobia (11.6 years) among those with major depression was much younger than the age of onset for major depression (23.2 years) and panic disorder.

Recognition of anxiety disorders by GPs is often poor and the proportion of patients who receive treatment is low. There are several well-defined anxiety disorders, the most frequent being agoraphobia, panic disorder and generalised anxiety disorder.[19] Women are more likely than men to develop anxiety disorders.[21] Epidemiological studies suggest that women have a two to three-fold increase in the occurrence of panic disorder and GAD.[21]

One UK study[22] found the lifetime prevalence of panic to be 8.6% and well over half of this sample of 1000 patients had single or multiple additional psychiatric diagnoses. The amount of perceived disability suffered by individuals with panic is considerable.

Phobias

Phobias are separated by the OPCS Psychiatric Morbidity Survey[20] into four categories: agoraphobia without panic disorder, agoraphobia with panic disorder, social phobias and specific (isolated phobias). All four categories are diagnosed if social impairment is present, if avoidant behaviour is a prominent feature and if there is an overall phobia score of 2 or more (scoring includes feeling nervous and anxious with the symptoms such as heart racing, hands

sweating, feeling dizzy and difficulty getting breath, among others, and avoidance behaviour). There is often overlap between panic and phobias, with many people suffering from both. There is also considerable co-morbidity between disorders such as agoraphobia and panic disorder with depression.[14] Panic and agoraphobia alone form a considerable mental health burden, being the fifth most common problem seen in primary care settings.[23] Phobias frequently have their onset early in life and are considered to be risk factors for later development of major depression and alcoholism.[24] One study of phobias found that simple phobias often involve multiple fears.[24] The most prevalent specific fears identified in this study were of animals for women and of heights for men.

Many people avoid the panic associated with their phobias through avoidance behaviours, which can have a considerable impact on their quality of life. One study of social phobia found that people with social phobia reported low functioning on the Quality of Well-Being (QWB) scale and dissatisfaction with many aspects of life.[25] Social phobia contributes to early behavioural difficulties and decreased academic performance, potentially leading to lower educational attainment and income.[26] Rates of reported lifetime prevalence of social phobia range from 0.5% to 16.0%.[26]

Changes in the diagnostic criteria have resulted in increased estimates in more recent years. Variations in prevalence rates may also be due to the use of different survey instruments and methods used to identify cases.

Obsessive–compulsive disorder

OCD is classified as an anxiety disorder, but was not included in the previous review as it is clinically quite distinct from the other anxiety disorders. DSM-IV (1994)[10] defines obsessions as recurrent and persistent thoughts, impulses or images that are intrusive and inappropriate, and that cause marked anxiety or distress. Compulsions are repetitive, purposeful and ritualistic behaviour or mental acts, performed in response to obsessional intrusion, to a set of rigidly prescribed rules. The behaviour must be aimed at reducing distress or preventing some feared outcome, and to reach criteria for OCD, the symptoms must impair a person's occupation or social life and cause significant distress.

OCD is a heterogeneous syndrome, which overlaps with both anxiety and mood disorders.[27] The prevalence of OCD varies according to age and gender, with around 50% of patients having onset in childhood or adolescence.[28] Six-month prevalence rates have been estimated at 1.5%, with a lifetime prevalence of 2.2–3%.[29,30] Untreated OCD has a long duration with low 1-year recovery rates.

Since OCD is characterised by neuropsychiatric symptoms that involve many functions (e.g. language, thought, memory and movement), it is likely that several cerebral regions are involved in the psychophysiology of this complex disorder.[27] Advances in neuroimaging techniques have suggested that an underlying dysfunction in OCD might be linked to the prefrontal cortex–basal ganglia–thalamic circuit, rather than to one brain region.[27]

A large variety of medications is used to treat OCD. Serotinergic agents [selective serotonin reuptake inhibitors (SSRIs)], including clomipramine, have been found to be effective compared with other antidepressants; the specific involvement of serotonin [5-hydroxytryptamine (5-HT)] in the pathophysiology of OCD has been proposed.[27] Relapse rates are high when medication is discontinued.[31]

Behavioural treatment for OCD involves exposure to whatever evokes obsessions and prevents avoidance or neutralisation of the resulting anxiety [exposure and ritual or response prevention (ERP)]. An example would be the patient touching something felt to be contaminated with germs, then refraining from repeated hand washing. Over time, the levels of anxiety and discomfort are reduced. Cognitive methods have been combined with behavioural treatment, for example to combat compulsive rumination with thought-stopping. Cognitive therapy aims to correct the obsessional thoughts (such as exaggerated sense of harm and personal responsibility) by Socratic questioning, logical reasoning and hypothesis testing. Cognitive therapy can also challenge the negative automatic thoughts associated with the obsessions.

The success of combining pharmacological and behavioural treatment for OCD ranges between 30 and 50% improvement in symptoms in 50–85% of patients, although some residual symptoms are common.[32] One quantitative analysis of the relative efficacy of behavioural and pharmacological treatments provided inconclusive results,[33] but additional studies have found ERP to be highly effective at reducing OCD symptoms.[34] Cognitive therapy appears to be an effective

adjunct to ERP in the treatment of intrusive thoughts and ruminations, and in the prevention of relapse.[35]

Current service provision

As stated previously, the majority of people identified with depression are treated in the primary care setting. Drugs prescribed in primary care are usually either tricyclic antidepressants (TCAs) or SSRIs. However, antidepressants are often associated with unwanted effects such as dry mouth, drowsiness, blurred vision, constipation, urinary retention and sweating for TCAs, and gastrointestinal effects, anorexia and hypersensitivity reactions among others for SSRIs.[36] This can result in poor compliance. As there is a stigma attached to the use of antidepressants some patients may be hesitant to use them. Benefits are not immediately apparent and can take several weeks to occur. Patients are also often unaware of the necessity for continued treatment over several months.

Some psychological therapies have been found to be as effective as antidepressants in treating mild to moderate depression. These include cognitive behaviour therapy (CBT), problem-solving therapy, psychodynamic-interpersonal therapy and interpersonal therapy.[14]

Treatments recommended for anxiety include CBT, antidepressant drugs, relaxation and other coping strategies and behavioural psychotherapy.[37] Panic disorders also benefit from CBT. Recommended treatments for phobias include combinations of cognitive treatments and exposure treatments.[37] SSRIs are considered by many to be the drug of choice in social phobia.[38]

In the OPCS Surveys of Psychiatric Morbidity in Great Britain,[20] one in eight people with a neurotic disorder was receiving treatment. Among this group two-thirds were taking medication and half were having either therapy or counselling. Patients classified as having two or more neurotic disorders were three times more likely to have received some form of treatment than those with one disorder (30% compared with 10%). In the OPCS survey the groups most likely to be receiving treatment were those classified as having a phobia (28%) or a depressive episode (25%). Those least likely to be receiving treatment were those with mixed anxiety and depressive disorder (9%). For patients with one or more neurotic disorders receiving treatment, 39% received psychotherapy or psychoanalysis, 2% received sex, marital or family therapy, 2% received art, music or drama therapy, 5% received social skills training, 51% received counselling and 2% received behaviour or cognitive therapy. Therefore 0.24% of all patients with a neurotic disorder receive either behaviour or cognitive therapy.

Although many patients with depression would prefer psychological therapy to drug treatment,[14] the huge demand for these services compared with the resource of trained staff available means that they are not available to the majority of patients. Not all GPs possess the skills for mental health work, so services must often be obtained elsewhere. Finally, GPs may not be enthusiastic about the appropriateness of mental health services for patients and may therefore not refer patients who might benefit from these services. GPs interviewed for the Clinical Standards Advisory Group (CSAG) study, concerned with the treatment of depression in the primary care setting in the UK, reported that NHS psychological therapy services had waiting lists of as long as 18 months for some therapies. Waiting times for appointments with mental health specialists providing sessions in primary care were generally shorter, ranging from 2–3 weeks to up to 3 months.[14] The very long waiting lists may mean that this treatment is simply not available to the majority of patients. There is also often a lack of clear referral criteria and referral pathways from primary care to specialist mental health workers.[14] As with many mental health services, the provision of psychological therapy is patchy, uncoordinated, idiosyncratic, potentially unsafe and not fully integrated into management systems.[39]

The National Service Framework (NSF) for Mental Health[1] was developed to determine models of treatment and care for adults of working age up to the age of 65 years living in England. The NSF for Mental Health defines national standards for mental health, what they aim to achieve, how they should be developed and delivered and how performance should be measured. Standard 2 of the NSF for Mental Health states that any service user who contacts their primary healthcare team with a common mental health problem should have their mental health needs identified and assessed and be offered effective treatments, including referral to specialist services for further assessment, treatment and care if they require it. Standard 3 states that any individual with a common mental health problem should be able to make contact round the clock with the local

services necessary to meet their needs and receive adequate care, and be able to use NHS Direct, as it develops, for first level advice and referral on to specialist helplines or to local services.

The House of Commons Select Committee on Health[40] investigated the delivery of general mental health services and the implementation of the NSF. The report states that there is clear evidence that there are considerable shortages in key mental health professions and that the NSF is unlikely to become a reality unless these shortages are addressed. One of the service gaps highlighted as currently inadequate was talking treatments such as counselling, psychodynamic psychotherapy, interpersonal psychotherapy and cognitive therapy (including CBT) on the NHS. Although the report identified a shortage of psychologically based treatments in the NHS, there was little evidence to determine whether this was due to a shortage of professionals, a lack of awareness among those responsible for purchasing mental health services as to their benefits, or cost. More research in this area is recommended.

NICE is in the process of producing guidelines for the management of depression in primary and secondary care[41] and the management of panic disorder and GAD.[42] Both of these guidelines were published in December 2004. A guideline for OCD was published in November 2005.

Cognitive behaviour therapy

CBT is a psychotherapy commonly practised in the NHS. CBT refers to the pragmatic combination of concepts and techniques from cognitive and behaviour therapies common in clinical practice.[2] The behaviour component of CBT is structured to solve problems and relieve symptoms by changing behaviour and the environmental factors that control behaviour. Graded exposure to feared situations is one of the most common behavioural treatment methods and is used in a range of anxiety disorders. Self-exposure therapy is exposure therapy that is administered by the patient, who exposes him or herself to situations of increasing difficulty. It is often used in the treatment of phobias.

The cognitive therapy component of CBT is also a structured approach. Techniques such as challenging negative automatic thoughts and behavioural techniques such as activity scheduling and behavioural experiments are used with the main aim of relieving symptoms by changing maladaptive thoughts and beliefs.[2] Relaxation training and social skills training are also used in CBT.[43]

The NSF for Mental Health states that CBT and interpersonal therapy have been found to be efficacious in the treatment of depression.[2] CBT has been identified as a major component of primary and secondary mental healthcare services. The NSF for Mental Health proposes national standards guided by ten principles, including service user involvement and evidence-based interventions.[44] There is strong evidence that CBT is effective in specialist settings, but the results from general practice have been equivocal.[45] A randomised controlled trial (RCT) compared treatment with non-directive counselling, CBT and usual GP care for patients with depression.[45] The study found counselling and CBT to be equally effective and superior to usual GP treatment for both depression and mixed anxiety/depression at 4 months. By 1 year the usual GP care group improved to be equivalent to the other two groups. Patients at 1 year expressed higher levels of satisfaction with the non-directive counselling treatment.

In another RCT of CBT, CBT was compared with imipramine, their combination or placebo for the treatment of panic disorder.[46] Combining imipramine and CBT appeared to confer limited advantage over imipramine alone acutely, but more advantage by the end of the maintenance phase. Each treatment worked well immediately following treatment and during maintenance. CBT improvements remained durable in the follow-up phase.

A recent systematic review of brief psychological treatments for depression[47] included CBT as well as interpersonal therapy (IPT), psychodynamic therapy (PDT) and supportive therapy (ST). The authors concluded that some forms of brief psychological treatments, particularly those derived from cognitive/behavioural models, were beneficial in the treatment of depression outside hospital settings.

A meta-analysis of treatment outcome for panic disorder[48] examined the effectiveness of pharmacological, cognitive behavioural and combined pharmacological and cognitive behaviour treatments in 43 controlled studies that included 76 treatment interventions. Cognitive behavioural treatments yielded the highest mean effect size (ES = 0.68) relative to the other treatments. Dropout rates were also found to be lower for CBT: 5.6% relative to 19.8% in

pharmacological treatments and 22% in combined treatments. Studies were selected on the basis that the patients had panic disorder with or without agoraphobia, and the studies used a control group and had random assignment to treatment. Studies that compared multiple or combination treatments were included as long as they had a control.

CBT is also effective in treating anxiety disorders with marked symptomatic anxiety (panic disorder, phobias and GAD).[2] In another RCT, patients meeting the criteria for GAD were randomised to CBT, analytical psychotherapy or anxiety management training.[49] In this trial, CBT was found to be significantly more effective than analytical psychotherapy. Anxiety management was also significantly more effective, although at follow-up CBT improvement was superior.

The Evidence Based Clinical Practice Guideline *Treatment choice in psychological therapies and counselling* states that common therapy length for CBT in the NHS is from eight to 20 sessions.[2] Therapy length of fewer than eight sessions is unlikely to be optimally effective for most moderate to severe mental health problems.[2] Often 16 sessions or more are required for symptomatic relief. Recommendations from the guideline are that patient preference should inform treatment choice, particularly where the research evidence does not indicate a clear choice of therapy. The skill and experience of the therapist should also be taken into account. More complex problems and those where patients are poorly motivated require the more skilful therapist.[2]

Two recent papers[50,51] have challenged the traditional length of time needed to obtain benefit from CBT. The RCT reported in these papers compared three groups: standard therapist contact of 6 hours, minimal therapist contact of 3 hours and bibliotherapy in 104 patients. The standard therapy group showed the greatest treatment efficacy, even though therapy was of notably shorter duration than the usual recommended length of therapy. There was significantly greater improvement in the standard treatment group compared with the bibliotherapy group on all end-point measures and on some end-point measures in the reduced therapy group.

In common with all psychological therapies, there are problems in the delivery of CBT, including too few therapists, expense, waiting lists and patients' reluctance to enter therapy. As stated previously, only 0.24% of patients with a neurotic disorder receive either behaviour or cognitive therapy.[20] There have been calls for therapists to rethink the traditional emphasis on 9–5 working hours, face-to-face sessions, hourly appointments and appointment systems run through outpatient waiting lists,[44] as this approach does not currently meet patient needs. At present there appears to be insufficient evidence available on the cost-effectiveness of CBT in comparison to alternative approaches to the management of depression.[52]

Description of new intervention

CCBT is one of several self-help therapies that aim to offer CBT to patients while using reduced amounts of therapist times. Stepped care is one approach in which a variety of self-help options is offered to appropriately screened patients.

Self-help therapies

There are currently problems with access to good mental healthcare due to staff shortages, patchy services, poor coordination between services and long waiting lists. Recent developments in psychological treatments have included problem solving, psychoeducation and self-help. These provide an alternative to the traditional therapist-led treatments.

Recent literature concerning the treatment of anxiety disorders using self-help, self-administered and minimal-contact interventions has shown that self-administered treatments seem most effective for motivated patients seeking treatments with simple phobias.[53] Minimal-contact therapies have demonstrated efficacy for a large number of anxiety diagnoses (e.g. specific phobia). Self-help therapies also appear efficacious for mild to moderate depression and anxiety disorders.[54]

Problem solving is a simple treatment that can be implemented by primary care staff, usually involving six sessions of treatment. Training is delivered to nurses in as little as four half-day sessions. Techniques include problem definition, choice of achievable goals, finding solutions and evaluation. There is evidence that problem solving can be of benefit in major depression.[55,56]

Psychoeducation involves eight weekly 2-hour sessions. The techniques include information, changing thoughts, activities and relaxation. Training includes a 2-day course, practice group, video assessment, follow-up meetings and ongoing quality control. Psychoeducation may be as effective as problem solving.[55,56]

Self-help is used to describe the use of materials to deliver treatment in a medium-based format such as via books, audiotapes or videotapes or computers, and used by an individual for self-treatment.[57] Self-help usually forms an adjunct to therapy or may be a standalone treatment.

A recent systematic review of self-help treatments for anxiety and depression found that the available evidence is limited in both quantity and quality.[58] The review concludes that these treatments may have the potential to improve the overall cost-effectiveness of mental health service provision.

Bibliotherapy

Bibliotherapy is one form of self-help involving minimal contact with a therapist. It usually takes the form of cognitive behaviour methods in a written format. Bibliotherapy is a self-administered therapy. It has been used for treating depression and anxiety.[58,59] Several studies have shown the efficacy of this treatment with a range of ages from children to older adults.[60]

Self-administered treatments, when used across a variety of disorders, seem more effective in comparison to no treatment.[58,61] Further research has shown that bibliotherapy, in comparison to therapist-administered treatments, is more effective for certain problems (assertion training, anxiety and sexual dysfunction) than for others (weight loss, impulse control and studying problems).[62]

Four meta-analyses of self-help[59,62–64] found that they are as effective as therapist-led cognitive behaviour therapy (TCBT). Self-help treatments appear to be most effective for skills-deficit training and the treatment of anxiety, depression and sexual dysfunction. In the meta-analysis of bibliotherapy for unipolar depression, it was found to be an effective treatment modality, and no less effective than either individual or group therapy.[59] With regard to additional therapist input, there appears to be little effect on patient outcome over self-help alone.[62–64] However, anxiety treatments do appear to be more effective when there is additional therapist contact.[62] Self-help approaches are not suitable for patients not interested in using self-help, those with severe or major depression, and patients with visual, hearing or reading difficulties.[57]

The evidence on self-help therapies is limited and at present there is little evidence to suggest that one approach may be more effective than another.

A recently completed trial assessed the use of self-help therapies in primary care.[54] This RCT, called Psychological Health Assessing Self-Help Education in Primary Care (PHASE), was a multicentre study in the UK and compared the use of a self-help booklet based on CBT techniques and facilitated by practice nurses with ordinary care by GPs for mild to moderate anxiety and depression. The self-help intervention consisted of up to three appointments, two 1 week apart and the third 3 months later. Outcomes of interest included Clinical Outcomes in Routine Evaluation Outcome Measure (CORE-OM), EuroQol-5Dimensions (EQ-5D), patient satisfaction and cost. In the intention-to-treat (ITT) analysis, patients treated with the self-help intervention attained similar clinical benefit for similar costs, but reported more satisfaction than those treated with ordinary GP care. Patients in the self-help group were more than twice as likely to achieve reliable and clinical change at 1 month compared with the ordinary care group, but this difference had disappeared by 3 months. Patients in the self-help group were also less likely to be referred to other services than those in the GP group.

Another trial, Self-Help in Anxiety and Depression (SHADE), involved the use of facilitated self-help using a manual with additional support from assistant psychologists in primary care settings within a stepped care framework. Preliminary results of this trial are now published.[65]

A Dutch RCT of patients with subthreshold depression explored the effects of minimal contact psychotherapy in primary care on the occurrence of new cases of major depression.[66] The authors report that 1 year after baseline, the incidence of major depressive disorder was significantly lower in the psychotherapy group compared with those receiving usual care.

Finally, a survey of CBT therapists' attitudes towards structured self-help materials[67] found that self-help materials were used by 88.7% of therapists who responded to the survey. The self-help materials were usually used as a supplement to individual therapy and delivered in paper-based formats.

Stepped care

Stepped care is a model of healthcare delivery that has been applied to a range of disorders.[68] In stepped care, more intensive psychological treatments are reserved for those patients who do not benefit from the simpler initial treatments. Results of treatments and provision are monitored

and changes made if current treatments are not achieving significant health gain. Stepped care programmes need to include careful monitoring of patients to prevent at-risk patients being put into treatment steps that are ineffective and potentially dangerous. Stepped care models have the potential to improve the efficiency of psychological therapy provision.[68]

To facilitate the implementation of a National Enhanced Service for depression the following model of stepped care has been proposed.[17] After appropriate initial assessment, the clinical pathway for stepped care in this model involves five steps. Patients enter at different steps depending on severity and previous history. Within steps there are choices for patients regarding type of treatment. Each patient has scheduled contacts to assess progress. Step 1 is watchful waiting. Step 2 involves four options: guided self-help, CCBT, group psychoeducation, exercise on prescription and signposting (assisting the patient in finding appropriate local or national voluntary organisations). Step 3 involves two choices: brief psychological therapy and medication. Step 4 involves chronic disease management principles of depression (such as assigning a case manager, provision of medication and/or psychosocial interventions, proactive management of the patient, feedback from the case manager to GP and mental health specialist) or longer term CBT or IPT. Finally, step 5 involves specialist treatment-resistant services.

Computers in mental healthcare

Computers are used for a variety of purposes in mental healthcare. They can be used as a diagnostic assessment tool, for assessment measures and to administer *in vivo* exposure, as well as to provide treatment.[69] Computers can also be used for monitoring patients' progress and to provide education to patients.[70] A variety of treatment options is possible and treatment may be via the Internet, interactive telephones or virtual reality systems.[71] Even patients who are illiterate can have access to computers via interactive voice response (IVR) telephone systems.

Computerised therapy has distinct possible advantages.[72] It allows the dissemination of standardised yet personalised treatments. The programs can be customised for each patient while still maintaining protocols in the correct sequence. Finally, the costs associated with computer-based treatments are potentially less than those associated with clinician-based treatments. Other advantages are that they can be used 24 hours a day, 7 days a week, depending on access, without affecting efficiency, and they do not suffer some of the deficiencies of human therapists such as memory problems and fatigue.[73] Computer-based therapies can potentially improve access to treatment, promote self-monitoring, give systematic feedback to the user and help with coping skills, as well as provide built-in outcome measures.[74] Privacy and consistency of care and ease of data collection are other advantages.[71]

Computer-based therapies can be used at home making them particularly useful for people who are currently unable to access care because of their mental health problems. Other setting options for computer-based therapies include GP surgeries, psychiatric clinics, walk-in clinics, libraries and supermarkets.

Fundamental requirements of computer programs in a public health system are that they are easy to use and of demonstrated effectiveness, and that they protect confidentiality of patient data.[74]

Client safety issues should be given careful consideration so that clinician negligence does not result in harm to the patient.[71] There is the danger that patients are left to use the computer with little supervision. Patient confidentiality also needs to be taken into account. Recent recommendations from the Department of Health[75] emphasise the need for clear understanding of informed consent, express consent, public interest, anonymisation and pseudonymisation of patient information. These issues affect the use of computers in mental healthcare as patient information must remain confidential but be accessible by professionals involved in the care of the patient.

Clinician resistance may be a barrier to the use of computers, as clinicians may feel supplanted. This approach may not be useful for patients who are not computer literate, although most programs are user friendly, requiring minimal computer skills. Some programs also use activation via the telephone as opposed to keyboard. Not all patients will be open to the idea of using a computer. Another drawback to the widespread use of computer treatment programmes is that some packages may be very expensive.

A computer-assisted therapy programme Therapeutic Learning Program (TLP), has been developed to permit individualised therapy in a group context.[76] In comparing TLP to standard

cognitive behavioural treatment in 109 patients, no significant differences were found in patient satisfaction, effectiveness or clinician-rated patient improvement, or on measures of anxiety and depression. Clearly, computers and Internet-based programmes are providing new advances in the psychological assessment, treatment and cost-effectiveness.[77] CLIMATE is a computer program that uses information from clinical practice guidelines for teaching patients about their disorder.[78] It uses cognitive behaviour principles to guide self-management in the treatment of anxiety and depression disorders.

Computerised cognitive behaviour therapy

As stated earlier, CBT is an effective treatment for many psychological disorders. Owing to problems such as lengthy waiting lists there is a real need to find new ways to make CBT accessible to patients. Along with the self-help approaches, such as bibliotherapy mentioned above, CCBT is a potentially useful treatment option for depression, anxiety and phobias, and involves minimal therapist contact.

Equipment required to use CCBT includes a computer or telephone. The type of equipment needed depends to a large extent on the program. At one end of the spectrum are programs available on CDs, which can be purchased by individuals for use on home computers. At the other end are programs requiring designated specialised computers.

Some CCBT programs are for use in GP surgeries or libraries and some are used over the Internet. Patients may use other programs at home or in clinic or hospital settings. The personnel required to implement CCBT can vary from a psychiatrist to a practice nurse. Therapist time needed will also vary depending on the program. Some are designed to need very little input, apart from a brief introduction and monitoring from someone with minimal training. Other programs are used as a treatment adjunct so that patients receive the same amount of CBT with a therapist and the computer treatment provides an additional technique.

CCBT programs are most often developed for specific patient groups, for example, patients with depression or patients with phobias. Some, however, may be used for more than one patient group. Programs are interactive in that the computer makes appropriate responses to the input received from the patients. On the basis of the responses, homework is often generated from the computer sessions. Examples of available CCBT packages include Overcoming Depression, Beating the Blues, FearFighter, Cope, BT Steps, MoodGym and ODIN. Currently, some CCBT software packages are being used in certain areas within the NHS.

In a national survey of 500 cognitive behavioural therapists, of whom 329 responded (65.8%), only 12 (2.4%) reported the use of computerised self-help and five (1%) reported its use as an alternative to patient–therapist contact.[79] The majority saw computerised self-help as a supplement rather than as an alternative to therapist-led treatment.

NICE guidance on CCBT

NICE issued guidance on the use of CCBT for anxiety and depression in October 2002.[80] There was felt to be evidence to suggest that CCBT may be of value in the management of anxiety and depressive disorders, but insufficient evidence to recommend general introduction of this technology into the NHS. Independent research was recommended to explore the role of CCBT within stepped care, including user preferences, suitability needs and educational/cultural characteristics.

The following recommendations for research were identified:

- Clinical efficacy but not clinical effectiveness for BtB and FF has been established. Further investigation into the clinical efficacy of other CCBT packages needs to be conducted.
- Optimum site of delivery needs to be established, whether primary or secondary care or dedicated centres.
- Criteria should be developed that allow identification of the optimum CBT package (including CCBT) for individual patients.
- Research is needed to identify individuals most suited to CCBT in preference to other methods of delivery of CBT.
- Processes for appropriate screening and referral for CCBT need to be established and implemented.
- The role and place of CCBT within stepped care need to be established, and the use of CCBT in conjunction with TCBT should be evaluated more fully.
- The level of facilitator involvement needed to produce optimal outcomes for CCBT should be evaluated.

- Research is needed to compare the cost-effectiveness of CBT via a computerised interface with TCBT and usual GP care and with a combination of these approaches.

Software packages included in this review

Five software packages are included in this review, three used to treat anxiety and/or depression, one to treat phobias and panic, and one to treat OCD.

Depression and/or anxiety

Beating the Blues

BtB is a CBT-based package for patients with anxiety and/or depression. It consists of a 15-minute introductory video and eight 1-hour interactive computer sessions. As described in the manufacturer's submission, the CBT strategies used include: identifying thinking errors, challenging automatic negative thoughts, modifying attributional style and identifying core beliefs. The behavioural techniques used include graded exposure, sleep management, problem solving, task breakdown and activity scheduling. The sessions are usually at weekly intervals and are completed in the routine care setting (i.e. GP's practice). Homework projects are completed between sessions and weekly progress reports are delivered to the GP or other health professional at the end of each session. These progress reports include anxiety and depression ratings and reported suicidality. No minimum reading age is specified.

Cope

Cope is a CBT-based system designed to help patients with non-severe depression. It is not recommended for patients with severe depression or who are actively suicidal. Cope was developed by a joint UK–USA-based team as an IVR plus workbook-based system. It is also available as a network version (netCope). It assumes a minimum reading age of 11 years. Patients can telephone as and when they wish.

Cope is a 3-month program with five main treatment modules. Module 1 is an introduction to the programme and depression. Module 2 is on assertive communication, expression of positive and negative feelings, and practising scenarios. Module 3 is on constructive thinking and module 4 is on pleasant activities. Module 5 is on consolidating strategies and relapse prevention. If the participant reports severe depression or suicide plans the system urges them to consult their doctor and will not allow the participant to continue until they and their doctor say that it is safe to continue. Suicide assessment questions are included and patients are urged to contact their doctor if suicidal ideation or plans were reported. Responsibility for reporting suicide risk appears to rest with the patient.

Overcoming Depression: a five areas approach

Overcoming Depression is a CD-ROM-based CBT system for patients with depression. A specific part of the remit of the system development was to offer CBT in as jargon-free form as possible. It assumes a minimum reading age of 9–12 years for all but one module.

The system consists of six sessions, each of which takes about 45–60 minutes to complete. The sessions are delivered in a mixture of text, cartoon illustrations, animation, interactive text, sound and video. There is an offer of a self-help support practitioner (who may be a nurse) at the beginning of each session. Sessions are completed on a weekly basis.

Phobia/panic

FearFighter

FF is a CBT-based package for phobic, panic and anxiety disorders. FF was originally developed for standalone PC (standaloneFF) but was later developed for use on the Internet (netFF). It is also available in a short version for educational purposes (FFeducation). FF assumes a minimum reading age of 11 years.

FF is divided into nine steps. Step 1 gives an introduction to the system and rates the participant on the Fear Questionnaire (FQ), and Work and Social Adjustment (WSA) scale, and asks about suicidal feelings and alcohol misuse. Step 2 describes CBT with case examples and asks participants to keep a daily record of phobia triggers. Step 3 is problem sorting, where the participant is asked to identify triggers for their fears and is shown relevant scenarios. They are also asked to rate their triggers on a 0–8 scale. Step 4 provides advice on getting a co-therapist. In Step 5 the participant sets and tests goals and rates them. The system then generates a personalised homework diary. In Stage 6 the participant is shown a series of coping strategies to be used during homework. In Stage 7 the participant is shown how to practise the strategies in both imagined and live CBT homework. Stage 8 reviews progress, including graphs, sets new goals, and gives feedback and advice. Step 9 is trouble-shooting. Therapist contact for FF is brief,

with 5 minutes before the session and up to 15 minutes after each session. For netFF, therapist contact is by telephone or e-mail.

Obsessive–compulsive disorder

BT Steps

As described in the manufacturer's submission, BT Steps is designed to help patients with OCD by helping them to plan and carry out CBT on a day-to-day basis. BT Steps was developed by a joint UK–USA-based team as a telephone IVR system plus workbook. It assumes a minimum reading age of 11 years. An Internet version is under development and will obviate the need for IVR and workbook. Helpline support is provided.

BT Steps is divided into nine steps. Step 1 introduces BTS, CBT and how to use the IVR system. Step 2 teaches participants how to identify rituals and their costs and explains CBT in more detail. It also takes the participant through a process of identify their own rituals and obsessions and then to rate themselves on the Yale–Brown Obsessive–Compulsive Scale (YBOCS) and the WSA scale. Step 3 involves the participant choosing triggers (cues) appropriate to them from a list of commonly found triggers to rituals and obsessions. The participant is then asked to rate the discomfort that each trigger causes. Step 4 invites the participant to involve, if they wish, a relative or friend as co-therapist and takes the co-therapist through the relevant parts of the workbook. The co-therapist is also asked to help the participant rate themselves on the Hamilton Rating Scale for Depression (HAM-D). Step 5 invites the participant to develop a first personal goal for CBT with their first trigger for rituals and obsessions, choose and practise coping tactics, describe the difference it makes, and decide whether a co-therapist will be used and whether the participant can commit the time. Step 6 is fine-tuning. Step 7 helps the participant with the CBT for each trigger and can be repeated as many times as necessary for many triggers. Step 8 is trouble-shooting and once again this can be repeated many times. Step 9 covers relapse prevention and the development of constructive alternatives to rituals and obsessions.

Chapter 3

Effectiveness

Methods for reviewing effectiveness

Identification of studies

Search strategies

The search aimed to identify all references relating to the clinical and cost-effectiveness of CCBT for anxiety and depressive disorders, with particular emphasis on the literature published since the original NICE guidance (no. 51).

Sources searched

Fifteen electronic bibliographic databases were searched, covering biomedical, health-related, science, social science and grey literature (including current research). A list of databases is provided in Appendix 1.

In addition, the reference lists of relevant articles were checked and various health services' research-related resources were consulted via the Internet. These included HTA organisations, guideline-producing bodies, generic research and trials registers, and specialist mental health sites. A list of these additional sources is given in Appendix 2.

Search terms

A combination of free-text and thesaurus terms was used. 'Population' search terms (e.g. depression, anxiety, panic, agoraphobia, phobia, obsessive–compulsive disorder) were combined with 'intervention' terms (e.g. cognitive therapy, behavio(u)r therapy, psychotherapy, AND computer, computerised, internet, computer-assisted instruction, multimedia, etc.). This was supplemented by more specific searches on named packages, such as Overcoming Depression, Beating the Blues, Restoring the Balance, FearFighter, Cope and BT Steps.

Copies of the search strategies used in the major databases are included in Appendix 3.

Search restrictions

No date, language, study or publication type restrictions were applied. This is because the searches included an additional population group (OCD) to the original NICE guidance.

Cost-effectiveness

In addition to the searches conducted above, searches were conducted in MEDLINE, EMBASE, NHS Economic Evaluation Database (EED) and Office of Health Economic Health Economic Evaluation Database (OHE HEED) specifically to identify economic literature relating to anxiety and depressive disorders. The methodological search filters used are provided in Appendix 4.

Inclusion and exclusion criteria

The following inclusion criteria were used.

- **Subjects**: adults with depression or anxiety with or without depression as defined by individual studies. To include generalised anxiety, panic disorders, agoraphobia, social phobia and specific phobias and OCD.
- **Intervention**: CBT delivered alone or as part of a package of care either via a computer interface (personal computer or Internet) or over the telephone with a computer response including the following software packages: BtB, Overcoming Depression, FF, Cope and BT Steps.
- **Comparators**: current standard treatments including TCBT, non-directive counselling, primary care counselling, routine management (including drug treatment) and alternative methods of CBT delivery (such as bibliotherapy and group CBT).
- **Outcomes**: improvement in psychological symptoms, interpersonal and social functioning, quality of life, preference, satisfaction, acceptability of treatment and site of delivery.
- **Study type**: papers will be assessed according to the accepted hierarchy of evidence, whereby systematic reviews of RCTs are taken to be the most authoritative forms of evidence, and uncontrolled observational studies the least authoritative. Unpublished studies will be included. Non-RCT evidence will only be included in this review in the absence of RCT evidence.
- **Studies from the previous review**: studies from the previous review of the included software packages will be included if they are RCTs. Previous non-RCT evidence of the software packages will only be included in this review in the absence of RCT evidence.

The following disorders did not fall within the remit of this review:

- post-traumatic stress disorder
- postnatal depression
- manic depression
- depression with psychotic symptoms
- past Tourette's syndrome
- schizophrenia
- bipolar disorder
- psychosis
- psychosurgery
- current co-morbid major depression
- serious suicidal thoughts or unstable medical conditions in the past 6 months
- alcohol or substance abuse.

Figure 1 shows a summary of study selection and exclusion.

A list of excluded studies (including excluded studies from the previous review) is provided in Appendix 5.

Quality assessment strategy

Quality assessment was based on the Critical Appraisal Skills Programme (CASP) checklist[81] for RCTs, as it is user friendly and practitioner based. The Downs and Black checklist[82] was used for non-RCTs. Key components of the quality assessment are listed in Appendices 6 and 7, (*Tables 21*, *22*, *36* and *37*).

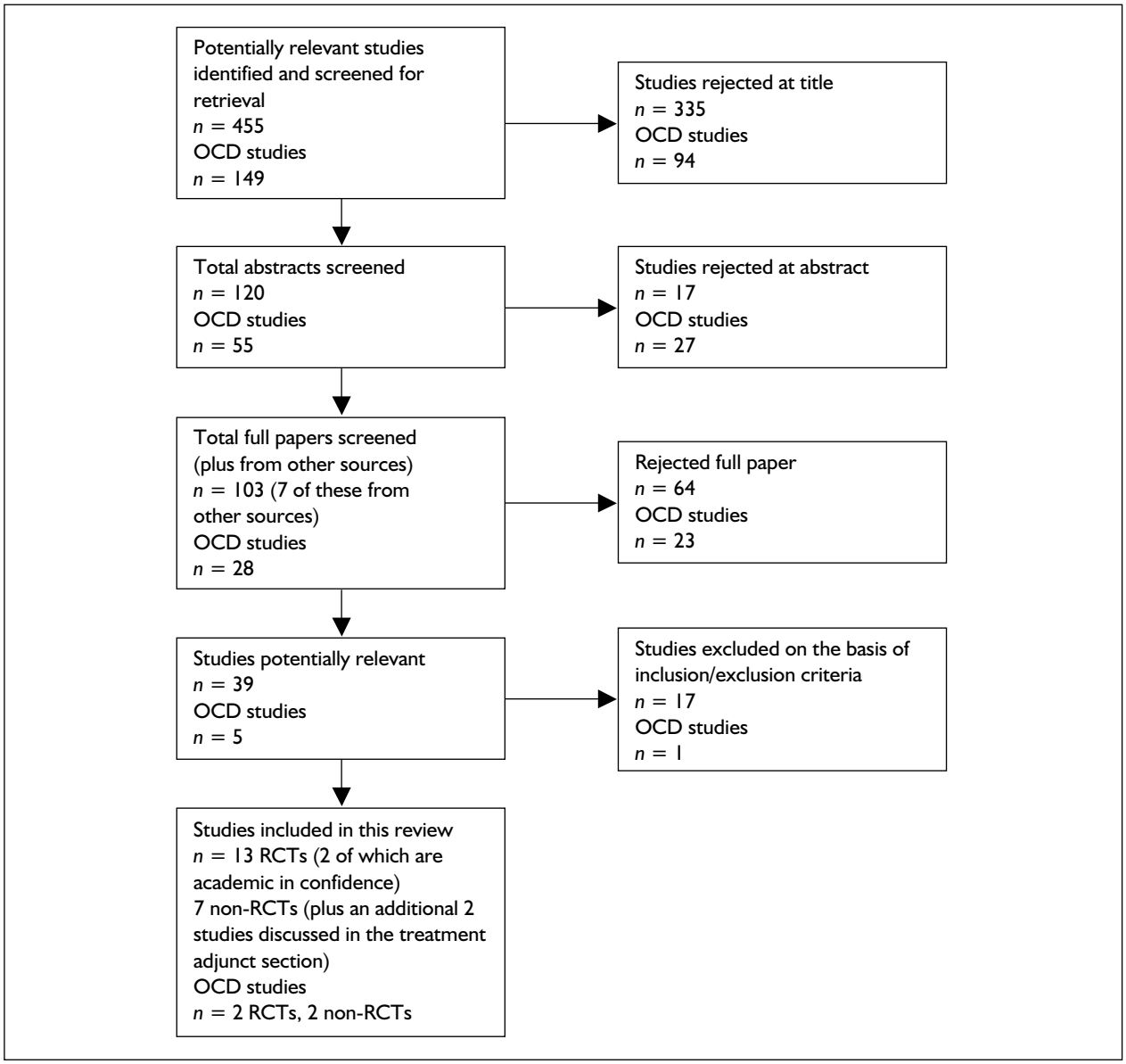

FIGURE 1 *Summary of study selection and exclusion*

TABLE 2 *Summary of patient populations*

Depression/anxiety studies	Phobia/panic studies
Cavanagh, 2004[84] (non-comparative) **BtB**	Kenwright, 2001[85] (non-RCT, comparative) **FF**
	Kenwright, 2004[86] (non-RCT, comparative) **FF**
Proudfoot, 2004[87] (RCT) **BtB**	Marks, 2004[88] (RCT) **FF**
Marks, 2003[89] (non-comparative) **Cope**	Schneider, 2005[90] (RCT) **FF**
Osgood-Hynes, 1998[91] (non-comparative) **Cope**	Carlbring, 2001[92] (RCT)
Whitfield, 2004[93] (non-comparative) **Overcoming Depression**	Carlbring, 2003[94] (RCT)
Christensen, 2004[95] MoodGym	Carlbring, 2004[96] (RCT)
Clarke, 2002[97] (RCT) ODIN	Fraser, 2001[98] (RCT) CAVE
	Gilroy, 2003[99] (RCT) CAVE
Yates, 1996[100] (pseudo-RCT) Balance	Heading, 2001[101] (RCT) CAVE
[Commercial-in-confidence information has been removed.]	

Data extraction strategy

All abstracts were double read and consensus was obtained. All data from included studies were extracted by one reviewer and checked by a second, using a standardised data extraction form, and any disagreements were resolved by discussion.

Data synthesis

Studies were assessed for suitability of pooling results with regard to populations, comparators outcomes and study type. The evidence base from the original CCBT review was also considered. Owing to a lack of sufficient similarity regarding these components, meta-analysis was not undertaken and the results are presented in tabulated format with narrative synthesis of the results.

Effect sizes

Where appropriate data were provided in the studies, effect sizes were calculated for selected outcomes. However, it should be noted that greater emphasis should be placed on the confidence intervals surrounding the treatment effect on the original scales of measurement. Two effect sizes were calculated, a within-group effect size and a between-group effect size (e.g. CCBT versus TCBT). The within-group effect size was calculated as the mean change over time (i.e. initial – final) divided by the baseline standard deviation. A positive value denotes an improvement. The papers did not report standard deviations of change in scores over time; therefore, it was not possible to divide the difference in change scores by the standard deviation of variability of change.

The between-group effect size was calculated as the difference in mean changes over time between the groups divided by the pooled baseline standard deviations of the two groups combined. Cohen[83] suggests that the standardised effect sizes of 0.2–0.5 should be regarded as 'small', 0.5–0.8 as 'moderate' and above 0.8 as 'large'. A positive value denotes that the first group had greater improvement than the second group.

Results

Quantity and quality of research available: depression/anxiety and phobia/panic studies

For this update, 20 trials [two of which are academic in confidence (AIC)] were identified, of which 13 were RCTs and seven were non-randomised trials. The evidence tables for these studies are presented in Appendix 6. The OCD studies are considered separately later in this chapter, with evidence tables in Appendix 7. *Table 2* summarises the studies included in this section on depression/anxiety and phobias/panic. Studies of included packages are identified by the name of the package in bold.

Studies from previous review

Studies of included software packages in the previous review are listed in *Table 3*. In the previous review, three studies of BtB were reported (Proudfoot,[102] Proudfoot,[103] and Grime[104]). The Proudfoot RCT[87] listed above in *Table 2* for BtB was included in the previous review; however, an additional 107 patients have now been included. Grime was excluded from this review as all patients were recruited via the workplace and a revised form of BtB was used to treat work-related problems. As two RCTs are now available for BtB the initial non-comparative pilot study[103] is excluded from this review.

TABLE 3 *Studies of Included software packages from the previous review*

Study	Software package	Study design	Inclusion in/exclusion from this review
Grime, 2001[104]	BtB	RCT	Work-related anxiety, depression and stress, no diagnosis by healthcare professional: excluded
Marks, 2004[88]	FF	RCT	Included in this review
Osgood-Hynes, 1998[91]	Cope	Non-comparative study	Included in this review
Proudfoot, 2003[103]	BtB	Non-comparative study (pilot test)	Superseded by RCT evidence: excluded
Proudfoot, 2003[102]	BtB	RCT	Included, but with additional patients
Shaw, 1999[105]	FF	Non-comparative study (pilot test)	Superseded by RCT evidence: excluded

For FF, a preliminary report of the Marks RCT[88] for FF was also included in the previous review and no new patients have since been added. The Shaw[105] study was a report of two small non-comparative pilot tests (n = 17 and n = 6) and is not included in this review as RCT evidence is now available.

With regard to Cope, no RCTs were identified in either review. Therefore, the Osgood-Hynes trial[91] is again included in this review. No studies of either Overcoming Depression or BT Steps were included in the previous review.

Appendix 6 contains the evidence tables with data extracted from the 20 studies included in this update. RCTs and non-randomised trials are presented in separate tables. Depression/anxiety studies are listed first, followed by phobia/panic studies. Studies of the included CCBT software packages are listed first within these categories, followed by other studies of either depression/anxiety or phobia/panic.

Study characteristics

Study characteristics for the 20 studies are described in Appendix 6 (*Tables 21* and *22*).

Description of CCBT

The studies reported varying degrees of detail regarding the description of the CCBT packages used. Studies of included packages provided clear descriptions of their computer programs or referenced such descriptions. These packages are described in detail in the section 'Description of new intervention', p. 8. With regard to the other computer packages, all provided a brief description of the main components of the program, and are described in Appendix 6 (*Tables 21* and *22*).

Study quality

The CASP checklist[81] was used to assess the quality of the 13 RCTs, and the Downs and Black checklist[82] was used to assess the quality of the seven non-randomised studies. These quality assessment tools were chosen over the Jadad criteria[106] used in the first review as they were felt to be more suitable for assessing the quality of trials of psychological therapies. Key components of quality assessment are listed in Appendix 6 (*Tables 21* and *22*).

Included packages: RCTs

Of the ten studies (one of which is AIC) of included packages in this review, only four were RCTs: Proudfoot[87] for BtB and Marks[88] and Schneider[90] for FF. The CASP checklist was chosen to assess the quality of these RCTs. Five core components of CASP, listed in Appendix 6 (*Table 21*), are method of randomisation, blinding, power calculations, the reporting of numbers and reasons for loss to follow-up. With regard to the four RCTs, the method of randomisation was reported for all four. Two studies reported blinded assessment[88,90] and three reported power calculations.[87,88,90] One study[90] reported numbers lost to follow-up as well as reasons why patients were lost to follow-up, and two RCTs of included packages reported numbers lost to follow-up and some reasons.[87,88]

[Commercial-in-confidence information has been removed.]

Included packages: non-RCTs

The quality of the non-RCTs was assessed using the Downs and Black checklist. The core items of Downs and Black include presence of a comparator group and method of allocation, identification of prognostic factors and case-mix

adjustment. Seven of the studies of included packages were non-randomised studies, four of which had no comparator group and were therefore of lower quality.[84,89,91,93] The two non-RCTs with comparator groups involved FF, in one case comparing with a group having clinician guided self-exposure therapy in another setting in the same year for whom data were available[85] and in the other comparing two types of FF delivery, Internet versus standalone computer.[86] No mention was made of how allocation to treatment was done, apart from for Kenwright,[86] in which patients were chosen for the Internet group owing to their inability to come to the clinic. None of these studies reported blinded assessment, power calculations, descriptions of prognostic factors or any adjustment for confounding, although Whitfield[93] compared scores for completers and non-completers. With regard to follow-up, numbers were reported, but not reasons in any of the seven studies.

Other studies

Ten other studies (one of which is AIC) are included in this review, nine of which were RCTs and one of which was a pseudorandomised study.[100] Method of randomisation was reported in all but three of these studies.[98,99,101] In the pseudorandomised study,[100] patients were assigned alternately to Balance or waiting list control (WLC). Two studies[99,101] reported blinded assessment and two studies reported power calculations.[95,97] Of the ten other studies, six[92,94–96,98,99] reported numbers lost to follow-up as well as the reasons why patients were lost to follow-up, but two of these[98,99] replaced dropouts with new patients during the study. No explanation was given for how the new patients were chosen. Two studies[97,101] reported numbers lost to follow-up but not reasons. One study reported numbers and only some reasons.[100]

[Commercial-in-confidence information has been removed.]

Other components of the Downs and Black quality assessment, such as reporting of main outcomes, patient characteristics, description of intervention, method of recruitment and ITT analysis are provided throughout the evidence tables.

In summary, the four RCTs of included studies appear to be of reasonable quality whereas the non-RCTs appear to be of considerably lower quality as most do not include a comparator group or they include an inappropriate comparator group.

Co-therapy or medication

Included packages

Of the ten studies (including one AIC) involving the included packages, four gave no information regarding the use of co-therapy or medication during the study, including BtB studies[84] and two FF studies.[85,86]

Other studies

In the ten other studies (including one AIC) included in the review, two gave no information regarding co-therapy and medication use,[98,101] while two studies reported some information[95,99] and the remaining six reported more extensive information on co-therapy and use of medication.

Comparators

Comparators are shown in *Table 4*.

Included packages

Four studies of the included packages had no comparator group, one BtB study,[84] the two Cope studies[89,91] and the Overcoming Depression study.[93] Two studies of FF compared CCBT to TCBT, one in an RCT, which also included a relaxation arm,[88] and one in an uncontrolled, non-randomised study.[85] One study of BtB[87] compared BtB with treatment as usual (TAU). The two other FF studies compared two different delivery modes (internet versus standalone computer)[86] and FF compared with a computer program excluding exposure.[90]

[Commercial-in-confidence information has been removed.]

Other studies

Three studies[96,99,101] compared CCBT with TCBT, one of which was in a prolonged single session.[101] Four studies compared CCBT with TAU, three of which were WLC.[92,100,101] Other studies compared CCBT with some type of placebo such as relaxation or information provision.[94,95,97–99] One study compared different numbers of sessions of CCBT.[98]

Sample size

Included packages

As in the previous review, samples sizes of the studies were generally small. For the included packages, one study for Overcoming Depression[93] had fewer than 30 patients taking part. Two studies for Cope[89,91] and two for FF[86,90] had between 30 and 80 patients and four studies had over 80 patients, two for BtB[84,87] and two for FF.[85,88]

[Commercial-in-confidence information has been removed.]

TABLE 4 *Comparators used in CCBT trials*

Study	Study type	TCBT	TAU	Other	None
BtB					
Cavanagh, 2004[84]	Non-comparative				✓
Proudfoot, 2004[87]	RCT		✓		
Cope					
Marks, 2003[89]	Non-comparative				✓
Osgood-Hynes, 1998[91]	Non-comparative				
FF					
Kenwright, 2001[85]	Comparative non-RCT	✓ (in separate cohort)			
Kenwright, 2004[86]	Comparative non-RCT			✓ (FF via Internet and FF via standalone computer)	
Marks, 2004[88]	RCT	✓		✓ (computer-guided self-relaxation)	
Schneider, 2005[90]	RCT			✓ (computer program excluding exposure)	
Overcoming Depression					
Whitfield, 2004[93]	Non-comparative				✓
Other studies					
Carlbring, 2001[92]	RCT		✓ WLC		
Carlbring, 2003[94]	RCT			✓ (applied relaxation)	
Carlbring, 2004[96]	RCT	✓			
Christensen, 2004[95]	RCT			✓ (web-based information programme and attention placebo control)	
Clarke, 2002[97]	RCT			✓ (information website)	
Fraser, 2001[98]	RCT			✓ (three sessions versus six sessions)	
Gilroy, 2000[107]	RCT	✓		✓ (relaxation)	
Heading, 2001[101]	RCT	✓ (prolonged single session)	✓ (WLC)		
Yates, 1996[100]	Pseudorandomised		✓ (WLC)		

Other studies

As for the sample size of the other studies, one had a sample size of fewer than 30 participants,[94] six had between 30 and 80 participants[92,96,98–101] and the others had over 80 participants.[95,97]

Therapy details

Tables 23 and *24* in Appendix 6 describe the details of therapy for the 13 RCTs and seven non-RCTS.

Recruitment

Included packages

All of the BtB studies[84,87] recruited patients through GP referral or screening with the General Health Questionnaire (GHQ). Recruitment for the Cope studies was through self-referral[89] and self-referral and health professional referral.[91] In contrast, referral for the Overcoming Depression study[93] was through consecutive referrals to a clinical psychology service. With regard to the four FF trials, three[85,88,90] used a mixture of self and health professional referral while one[86] used self-referral only.

Other studies

For the other studies, one trial recruited by a mailshot to a random sample drawn from the electoral register[95] and other trials[97] recruited participants with known diagnoses from a health scheme. One study recruited from a waiting list of patients referred to psychological services for further treatment by their GPs.[100] The remainder were self-referrals recruited via newspapers or other sources.

Number and length of sessions

Included packages

BtB consisted of an introductory session lasting for 15 minutes and eight treatment sessions of 50 minutes each. The Cope system used telephone calls, and one Cope study[89] reported a mean of 11 ± 8 calls with a total of 122 ± 83 minutes on telephone calls. The other Cope study[91] reported a mean of 12.7 minutes for calls. Overcoming Depression used six sessions of 45–60 minutes each. For FF, two trials[88,90] consisted of six sessions, one with two follow-up sessions. One of

the FF studies[85] reported a mean of four sessions, and the fourth FF study[86] reported seven sessions for those accessing FF in the clinic, while the Internet group had unlimited access over a 12-week period. Sessions were reported to be 1 hour and the study reporting Internet usage found that FF was used 16 ± 11 times over 66 ± 2.5 days.

Other studies

The Balance system[100] consisted of a 1-hour session with 10–30 minutes debriefing, with the option for more. Fraser[98] and Gilroy[99] reported sessions of 45 minutes for CAVE, the first with three or six sessions and the second with three, while Heading[101] reported the use of a single 3-hour session for CAVE.

Christensen[95] reported six sessions for MoodGym, Clarke[97] reported mean and range (1–33 sessions) for ODIN, and Carlbring[92,94,96] reported the number of modules, but not the number of sessions. Modules may be completed in more than one session. These studies give no information regarding the length of sessions.

Therapist contact and background

Table 5 presents the results for the outcome of therapist time. Some studies[95,97] gave no information regarding the amount of time spent with a therapist.

Included packages

For BtB, one study[87] reported therapist contact of 80 minutes over eight sessions using a practice nurse, while the other study[84] reported only 5 minutes at the first computer session by a local service receptionist or secretary.

[Commercial-in-confidence information has been removed.]

Cope used nurse therapists and reported a mean of 46 ± 46 minutes therapist time.[89] With Overcoming Depression,[93] the screening interview was 20–30 minutes with a total of 47.4 minutes spent on the six sessions. Screening was by a clinical psychologist with a self-help support nurse providing the support during the sessions. For the FF studies, total therapist time ranged from 63 minutes total[85] to 115 ± 44 minutes total by telephone, excluding screening.[90]

Other studies

For the Balance system,[100] up to 30 minutes was spent on each patient after the single session by a psychologist. Other studies report no information on length of therapist contact[95–97] and three studies report that all contact was via Internet/e-mail.[92,94,96] Three studies[98,99,101] report that therapists were postgraduate students and were present for the first 5 minutes of treatment only and to carry out the initial assessments.

Study site, follow-up and inclusion/exclusion criteria

Tables 25 and *26* in Appendix 6 describe the study site, follow-up and inclusion/exclusion criteria of the included studies.

Study site and setting

Included packages

All studies of the included packages were carried out in the UK, although one FF study[90] had participants from the UK, the USA and Canada. The BtB studies[84,87] were carried out in GP surgeries and other primary care services. The Cope studies were conducted via the telephone[89,91] and the Overcoming Depression study[93] was concluded within a clinical psychology service. FF studies were carried out within hospital-based psychiatric services,[85,88] both at home and in a self-help clinic,[86] or in a variety of settings such as home, office, library, clinic and via the Internet.[90]

Other studies

The Balance study[100] took place in GP surgeries and a research office in the UK. Six studies involved home Internet use, one in Australia,[95] one in the USA[97] and three in Sweden.[92,94,96] The three phobia studies of CAVE took place in a university setting in Australia.[98,99,101]

Follow-up

Included packages

For BtB, the Proudfoot study[87] reports reasons for loss to follow-up, while Cavanagh[84] does not. [Commercial-in-confidence information has been removed.] For one Cope study[89] some reasons are reported, but not all, while no reasons are reported for the other Cope study.[91] For Overcoming Depression, Whitfield[93] reports no information regarding reasons for loss to follow-up. Of the four FF studies, two report no information regarding reasons for loss to follow-up.[85,86]

Other studies

Of the remaining studies in this review, two report no information regarding reasons for loss to follow-up[97,101] and the others report information regarding reasons for most patients.

Inclusion and exclusion criteria

All studies included in this review had clearly stated inclusion criteria; however, one study[97] did not report exclusion criteria. As with the previous

TABLE 5 *Therapist time*

Study	Study type	CCBT	Comparator
Included packages			
Proudfoot, 2004,[87] BtB	RCT	80 minutes over eight sessions	NR (TAU)
Cavanagh, 2004,[84] BtB	Non-comparative	5 minutes for first session, other therapist time not reported	No comparator
Marks, 2003,[89] Cope	Non-comparative	46 ± 46 minutes	No comparator
Osgood Hynes, 1998,[91] Cope	Non-comparative	Assessment only	No comparator
Marks, 2004,[88] FF	RCT	76 ± 43 minutes	Therapist 283 ± 118 minutes; relaxation 76 ± 22 minutes
Schneider, 2005,[90] FF	RCT	115 ± 44 per patient plus screening 40 minutes	87 ± 28 minutes for Managing Anxiety computer group
Kenwright, 2001,[85] FF	Comparative non-RCT	63 minutes mean including 20 minutes screening	Mean of 444 minutes (TCBT)
Kenwright, 2004,[86] FF	Comparative non-RCT	113 ± 28.1 for Internet FF users	99 ± 11.4 minutes for standalone FF users
Whitfield, 2004,[93] Overcoming Depression	Non-comparative	47.4 minutes plus 20–30-minute screening interview	No comparator
Other studies			
Carlbring, 2001[92]	RCT	No direct contact, 90 minutes mean for assessment, administration and e-mails, all contact via Internet	NR (WLC)
Carlbring, 2003[94]	RCT	No direct contact, 30 minutes for standardised e-mail messages, all contact via Internet	NR (applied relaxation)
Carlbring, 2004[96]	RCT	NR, all contact via Internet	Maximum 600 minutes (TCBT)
Christensen, 2004[95]	RCT	Weekly telephone calls by lay interviewer	Information website: weekly telephone calls by lay interviewer; attention placebo: weekly telephone calls by lay interviewer
Clarke, 2002[97]	RCT	NR	NR (information website)
Fraser, 2001[98]	RCT	15 minutes (for three sessions) plus assessment	30 minutes (for six sessions)
Gilroy, 2003[99]	RCT	Three assessments + 5 minutes	TCBT: three 45-minute sessions; relaxation: 5 minutes
Heading, 2001[101]	RCT	Maximum of 15 minutes + assessment	3 hours (TCBT)
Yates, 1996[100]	Pseudorandomised	Up to 30 minutes	NR (WLC)

[Commercial-in-confidence information has been removed.]
NR, not reported.

review, many exclusion criteria included co-morbidities often associated with depression, anxiety and phobias, and this has implications for the reproducibility of the results from these studies.

[Commercial-in-confidence information has been removed.]

Patient characteristics

Patient characteristics are described in Appendix 6 (*Tables 27* and *28*).

Diagnosis of disorder

Only two studies[85,97] gave no information regarding the method for diagnosing the disorder, one of which was a study for FF.[85] Two studies report methods other than a screening tool. Whitfield[93] in the Overcoming Depression study reports the use of a screening appointment with brief risk assessment. Yates[100] relies on GP clinical judgement for diagnosis. Methods for diagnosis included the following:

- General Health Questionnaire (GHQ)-12

- International Classification of Diseases (ICD)-10
- Kessler psychological distress scale
- Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV
- Composite International Diagnostic Interview (CIDI)
- Behavioural Assessment Test (BAT).

[Commercial-in-confidence information has been removed.]

Age, gender, ethnicity, background and patient history

As in the previous review most studies had considerably more female than male participants, apart from Whitfield[93] in the Overcoming Depression study and Kenwright[86] in one of the FF studies, with slightly more males, and Yates[100] with equal numbers. In most studies, patients were aged between 30 and 45 years, although mean ages and standard deviations were not always reported. Not many studies[87,97–99,101] reported information on ethnicity, with only two actually including patients from ethnic minorities: Proudfoot[87] for BtB and Clarke.[97] Five studies[84,85,92,94,96] reported no information regarding patients' education and socio-economic background; the others reported at least some information.

[Commercial-in-confidence information has been removed.]

Of the included packages, all reported information on patient history, such as duration of symptoms and previous therapy or medication, apart from Whitfield[93] in the Overcoming Depression study. With regard to the other studies in the review, five[97–101] reported no information regarding patient history.

[Commercial-in-confidence information has been removed.]

Baseline comparability

Information on baseline comparability (no significant difference for important variables before treatment) is only relevant for the comparative studies included in the review. Of these, Proudfoot[87] for BtB did not report information on baseline comparability.

Outcomes and results

Outcomes to be reported in this review included:

- clinical effectiveness in terms of improvement in psychological symptoms
- effectiveness in terms of interpersonal and social functioning
- effectiveness in terms of preference, satisfaction and acceptability of treatment.

Improvement in psychological symptoms and interpersonal and social functioning

The psychological symptoms and interpersonal and social functioning outcomes reported in the studies are presented in Appendix 6 (*Tables 29* and *30*) together with the instruments or scales used to measure these outcomes.

Instruments

Outcomes on the whole related to improvement in depression and anxiety symptoms or improvement in symptoms of phobias. To measure these outcomes a variety of instruments was used by the investigators. The full range of these instruments is presented in *Table 6*. Of these instruments, the BDI, BAI, HRSD and HADS are well recognised and frequently used scales to measure depression and/or anxiety. Of the others, little information was found to recommend one over another with regard to validity and reproducibility.

- **The Beck Depression Inventory (BDI)** is a 21-item self-report scale used to determine depression severity. Items are scored on a 0–3 scale giving a total range of 0–63. Total scores within the 1–9 range indicate minimal depression, 10–18 mild depression, 19–29 moderate depression and 30–63 severe depression.
- **The Beck Anxiety Inventory (BAI)** is also a 21-item self-report scale. Patients rate symptoms from 0 to 3 according to severity. A score of 0–9 reflects normal levels of anxiety, 10–18 indicates mild to moderate anxiety, 19–29 moderate to severe anxiety and 30–63 severe anxiety.
- **The Hamilton Rating Scale for Depression (HAM-D, HRSD)** is designed to be used on patients already diagnosed as suffering from an affective disorder of depressive type. There are 17 variables measured on either a five-point or a three-point rating scale.
- **The Hospital Anxiety and Depression Scale (HADS)** is a self-assessment instrument for measuring depression and anxiety independently. It was developed for use with physically ill patients. It is limited to 14 items and scored on a four-point scale from 0 to 3.
- **Work and Social Adjustment (WSA)** is a self-report scale of five single-item subscales: ability to work, home management, social life, private leisure and relationships. A sixth scale measures

TABLE 6 *Scales used as outcome measures in included studies*

Scale	Abbreviation	Studies used
Beck Depression Inventory and Beck Anxiety Inventory	BDI, BAI	Proudfoot,[87] Carlbring,[92,94,96] Marks,[89] Whitfield[93]
Beck Hopelessness Scale	BHS	Whitfield[93]
Social Adaptation Self-Evaluation Scale	SASS	Whitfield[93]
Hamilton Rating Scale for Depression	HRSD or HAM-D	Marks,[89] Osgood-Hynes[91]
Phobic Targets	PT	Fraser,[98] Gilroy,[99] Heading[101]
Hospital Anxiety and Depression Scale	HADS	Yates[100]
Attributional Style Questionnaire	ASQ	Proudfoot[87]
Center for Epidemiologic Studies Depression Scale	CESDP	Christensen,[95] Clarke,[97]
Main Problems and Goals		Marks,[88] Schneider[90]
Work and Social Adjustment scale	WSA	Proudfoot,[87] Marks,[88] Schneider,[90] Cavanagh,[84] Marks,[89] Kenwright,[85,86] Osgood-Hynes[91]
Work and Adjustment Rating Scales	WARS	Fraser,[98] Gilroy,[99] Heading[101]
Fear Questionnaire	FQ	Marks,[88] Schneider,[90] Fraser,[98] Gilroy,[99] Heading,[101] Kenwright[85,86]
Body Sensations Questionnaire	BSQ	Carlbring[92,94,96]
Agoraphobic Cognitions Questionnaire	ACQ	Carlbring[92,94,96]
Mobility Inventory for Agoraphobia	MI	Carlbring[92,94,96]
Automatic Thoughts Questionnaire	ATQ	Christensen[95]
Spider Questionnaire	SPQ or SQ	Fraser,[98] Gilroy,[99] Heading[101]
Short Form 12, Physical Component Summary and Mental Component Summary	SF-12 PCS, SF-12 MCS	
Quality of Life Inventory	QOLI	Carlbring[92,94,96]
Montgomery Åsberg Depression Rating Scale	MADRS-SR	Carlbring[96]
Behavioural Assessment Test	BAT	Fraser,[98] Gilroy,[99] Heading[101]
Subjective Units of Distress Scale	SUDS	Fraser,[98] Gilroy,[99] Heading[101]
Clinical Outcomes in Routine Evaluation Outcome Measure	CORE-OM	Cavanagh[84]
General Health Questionnaire	GHQ-12	Yates[100]
Coping Responses Inventory	CRI	Yates[100]

the degree to which the problems impair their overall ability to lead a normal life. Each of the indices is measured by a single item Likert scale ranging from 0 to 8, with 8 indicating severe impairment. The total score range is 0 to 40.

- **The Beck Hopelessness Scale (BHS)** was originally developed to predict suicide risk. The scale measures negative attitudes about the future. It is a 20-item true/false test which examines three aspects of hopelessness: feelings about the future, loss of motivation and expectations. It is designed for use with people aged from 17 to 80 years, and takes 5–10 minutes to administer.
- **The Social Adaptation Self-evaluation Scale (SASS)** contains 21 items covering aspects of social interactions, global social attitude and self-perception. It evaluates social motivation and behaviour. The SASS is sensitive to changes in the different areas of social functioning.
- **The Attributional Style Questionnaire (ASQ)** measures how people perceive everyday situations. It uses 12 scenarios with themes of achievement or affliction. Six of the scenarios have positive outcomes and six have negative outcomes. Participants are required to imagine themselves in each situation and then determine the major cause of the event.
- **The Fear Questionnaire (FQ)** is a 20-item self-report questionnaire, on a 0–8 scale (0 = do not avoid to 8 = always avoid), about phobias and depression. It provides scores for three types of anxiety: agoraphobia, blood-injury phobia and social anxiety, plus a rating of how distressing the anxiety is (anxiety–depression score). A global phobic rating can also be derived. It is

used with adults and takes 5–10 minutes to administer.
- **CORE-OM** is a 34-item scale measuring the domains of symptoms, functioning, well-being and risk. The total mean score ranges from 0 to 4, with a high score representing increased problem severity.

Results for psychological symptoms and interpersonal and social functioning outcomes
The results for improvement in psychological symptoms and interpersonal and social functioning outcomes are presented in Appendix 6 (*Tables 31* and *32*). The results for the included packages and other studies are described below by comparator. Some studies are reported more than once owing to multiple comparators. Calculated effect sizes are presented in Appendix 8.

Included packages
CCBT versus TCBT Two FF studies compared CCBT with TCBT.[85,88] In the RCT,[88] both the FF group and the therapist group improved significantly from baseline. In the other uncontrolled, non-randomised study,[85] both groups improved significantly from pretreatment scores; however, the TCBT group scores were more severe at baseline.

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CCBT versus TAU One of the studies of the BtB compared CCBT with TAU in an RCT.[87] CCBT significantly improved scores for depression, negative attributional style, work and social adjustment compared with TAU. However, for anxiety and positive attributional style, treatment was found to interact with severity, so that CCBT was significantly more effective than TAU only for more severe patients.

CCBT versus other comparisons One FF study compared two delivery methods, internet versus standalone computer, in a non-randomised study and both groups improved significantly on all measures.[86] In the other FF study,[90] FF was compared with another computer program with cognitive components but no exposure (Managing Anxiety), both of which were delivered via the Internet. Both computer programs were equally effective post-treatment, but at 1 month follow-up FF was significantly more effective on some measures.

The FF study mentioned above[88] included a relaxation group as well as TCBT. The relaxation group had no significant improvement compared with the CCBT and TCBT groups in this study.

Other studies
CCBT versus TCBT Three studies[96,99,101] compared CCBT with TCBT. Carlbring,[96] involving patients with panic disorder (PD), found CCBT to be effective but less so than TCBT, with results maintained at 1-year follow-up. Gilroy[99] also reports significant improvement in both the CCBT and TCBT groups for patients with spider phobia, but more so for TCBT. Improvements were maintained at 33-month follow-up. Heading[101] compared single-session CCBT with single-session TBCT for patients with spider phobia and found single-session TCBT to be significantly more effective than single-session CCBT. All three of these trials were RCTs.

CCBT versus TAU/WLC Three studies[92,100,101] compared CCBT with WLC. Carlbring[92] found that participants with PD improved significantly on most measures in the CCBT group, but not in the WLC group. Heading[101] found no significant difference between single-session CCBT for spider phobia and WLC. Yates[100] found significant improvement in some depression scores, but not Coping Responses Inventory (CRI) scores compared with WLC. Two of these studies were RCTs[92,101] and one was a pseudorandomised trial.[100]

CCBT versus other comparisons Several studies[94,95,97–99] compared CCBT with other comparators. Of these, two studies compared CCBT with relaxation,[94,99] one of which[94] found relaxation to be somewhat more effective than CCBT for the treatment of PD and the other[99] found relaxation to be as effective as CCBT for the treatment of spider phobia.

One study compared CCBT with web-based information sites.[95] Christensen[95] found that both CCBT and web-based information groups improved significantly. One study comparing CCBT with TAU plus access to an information website,[97] found no improvement in either the CCBT group or the web-based information group plus TAU for treatment of depression.

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Finally, one study[98] compared three sessions with six sessions of the same CCBT program for spider phobia and found that both groups improved significantly on most measures.

In the previous review, two studies were included comparing CCBT with bibliotherapy. One study found CCBT to be as effective as bibliotherapy[108] and the other found bibliotherapy to be more effective than CCBT.[109] No further studies were identified in this review.

Patient preference, satisfaction and acceptability
The outcomes of patient preference, satisfaction and acceptability of treatment are presented in Appendix 6 (*Tables 33* and *34*).

Included packages
Beating the Blues Proudfoot[87] found that BtB patients were significantly more satisfied with treatment than TAU patients, but values were not reported. Cavanagh[84] provided no information on these outcomes.

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FearFighter Marks'[88] ratings of treatment helpfulness were reported, no significant differences between FF, TCBT and relaxation with regard to this outcome although FF patients tended to be more satisfied than relaxation patients. Satisfaction ratings for Schneider[90] did not differ between FF and the Managing Anxiety program. Satisfaction was positively correlated with the outcome of the main problem. In Kenwright,[86] Internet users were said to be generally satisfied, although no data were reported; three of ten Internet users said that they would have preferred face-to-face guided self-help to Internet-guided self-help. Kenwright[85] reported no data on these outcomes.

Cope No information was reported specifically for Cope in Marks;[89] however, in the previous review, in the Osgood-Hynes study,[91] patients were found to feel comfortable with the system, found it easy to use and found the booklets helpful, while 75% of the 28 completers said that Cope had improved the quality of their lives.

Overcoming Depression All 15 respondents in the Whitfield study[93] said that they would recommend the program to others. At the end of treatment 80% said that they would prefer a CD-ROM over book treatment, 60% rated treatment usefulness as 'a lot' and 40% as 'a little'.

Other studies
Several studies reported no information regarding patient preference, satisfaction and acceptability of CCBT.[95,97–99] Carlbring[92,94] reported that most participants with PD in these studies considered CCBT to be personal, and most found it an advantage to have treatment at home. Participants in Carlbring[92] regarded the lack of eye contact as helpful. Most participants in Carlbring[96] also reported satisfaction with treatment. Gilroy[99] found that participants rated live exposure therapy (TCBT) for spider phobia as more acceptable and helpful than CCBT. Finally, Yates[100] found that the overall response to the Balance programme for depression was positive and that the programme made participants think in a new way about their problem.

Studies with additional information
Three studies were identified in the literature searches and are included here as they were felt to add additional information regarding the delivery and acceptability of CCBT. The first describes the use of a questionnaire to ascertain preference for location of CCBT and mode of delivery. The other two studies are very small trials of BtB.

Graham and colleagues (2000)[110]
Computer-aided self-help services for OCD and agoraphobia were advertised on Teletext. Information and a questionnaire were sent out to 326 people. The questionnaire covered whether or not the respondent would access self-help if GP referral was required, preferred mode of access and how much they would pay for the service. Completed questionnaires were returned by 113 people (35%). Of these, 27% did not want to go via their GP. With regard to mode of access, 35% preferred the Internet, 45% a telephone IVR system, 43% a CD-ROM at home, 23% a computer at their GP surgery, 22% a computer in their local community mental health resource centre, 16% a computer in a leisure centre, café or pharmacy, and 62% a book. Twelve per cent preferred other modes of delivery, such as telephone support from a human therapist, audiotape, CD or video. Participants were willing to pay a mean of £10 per session (ranges 0–100).

Keaverny and Blackburn, (2004)[111]
The study took place in Doncaster and South Humber Healthcare Trust where BtB had been in place in GP surgeries. The terminals were removed and recently relocated in the East Community Mental Health Team. The reasons for relocation were unclear. The aim of the study was to determine the views of the practice leads and practice managers concerning the implementation of BtB. Questionnaires were administered to practices that had used BtB and another

questionnaire to practices that had not had access to the programme.

Eighteen practices were involved, four of which had used BtB and 14 that had not. Responses were received from two of the four practices using BtB and two of the 14 not using BtB. The two respondents who had not used BtB felt that the advantages of the community mental health team (CMHT) were that there would be more support and that there was not enough room in the GP surgery.

The two respondents who had used BtB were asked whether they were happy for the terminals to be removed. One respondent was not concerned and the other was happy with the removal of the terminals. Both respondents preferred the terminals to be in the CMHT.

Three respondents were then interviewed through semi-structured interview. The interviewees felt that removal of the terminals of the CMHT gave access to more people although disappointment was expressed as the programme had become an integral part of the service and many patients had found it helpful and convenient based in the GP practice. Advantages of BtB were that it helped people without using drugs, it was thought to help with positive thinking, people were probably less likely to relapse, it required the patient to do some work themselves, some people may find it difficult to open up to people, cost saving with regard to staff time and immediate access. Perceived disadvantages were the location, high non-attendance and preference for human contact. Many patients found it difficult to cope with the fact that it was a computer-based programme; it was felt to discriminate against those who are older and those without IT skills. It was considered a disadvantage to use it in place of a person owing to lack of funds.

Coxall and Blackburn (2004)[112]
This was a small study of BtB used in a secondary care setting for anxiety and depression. Nine participants were recruited into the study, but only three completed the programme. Outcome measures were BAI, CORE and Millon Clinical Inventory-III (MCMI-III). The three participants showed symptom improvement, but this was not statistically significant.

Studies using CCBT as a treatment adjunct

No studies of CCBT as a treatment adjunct were identified for the included packages. Two other studies of CCBT as a treatment adjunct were identified. These are briefly described below.

Gruber and colleagues (2001)[113]
This study describes computer-augmented cognitive behavioural group therapy (CACBGT) for social phobia. A preprogrammed handheld computer (Casio PB-1000) was used as an adjunct to cognitive behaviour group therapy (CBGT). The computer produced an audible reminder each morning for the participant to confront a social fear that day. Before entering a feared social situation the participant started the computer, which was programmed to remind the participant of key strategies learned in the group session. Two hours after the social situation the computer again prompted the participant to start the programme, this time for a debriefing module.

At post-treatment, the CACBGT group was significantly better than the WLC on most measures of behaviour, but there was no significant difference on self-report. CBGT (i.e. without the computer) was significantly better than control on most behavioural measures and self-report. Participants in the CACBGT reported more positive thoughts than CBGT at post-treatment, but not at follow-up. CBGT appeared to have a stronger effect than CACBGT in reducing social phobia symptoms at post-treatment, but by follow-up both appeared equally effective.

Kenardy and colleagues (2003)[114]
This study describes computer-augmented cognitive behavioural therapy (CACBT) for PD. A preprogrammed palmtop computer (HP200LX) was programmed to signal to participants five times daily to prompt practice of therapy components. The computer program included modules for self-statement, breathing control and a new exposure module for both situational and interoceptive exposure. Twelve sessions of conventional CBT were better in outcome than six sessions of conventional CBT, and six sessions of CACBT were between the two in terms of outcome but not statistically significantly different from either.

OCD studies

Four studies of OCD were included in this review, all using BT Steps, as shown in *Table 7*.

Study characteristics
Tables 36 and *37* in Appendix 7 show the study characteristics for the OCD studies. Two studies were RCTs, one comparing BT Steps with TCBT and relaxation[115] and the other comparing BT

TABLE 7 *OCD studies of BT Steps*

Study	Study type	Comparators
Greist, 2002[115]	RCT	TCBT relaxation
Kenwright, 2005[116]	RCT	Two types of BT Steps compared: scheduled support vs on-demand support
Greist, 1998[117]	Non-comparative trial	None
Bachofen, 1999[118]	Non-comparative trial	None

Steps with scheduled telephone support versus BT Steps with on-demand telephone support.[116]

For the randomised trials, Greist[115] does not report method of randomisation, while the Kenwright study[116] does. None of the four studies of OCD used blinded assessment or reported power calculations and only one reported reasons for loss to follow-up.[118] With regard to co-therapy or medication, only Bachofen[118] reported no information. Sample sizes ranged from 23 for the non-comparative Bachofen study[118] to 218 for the Greist study.[115]

Therapy details

Therapy details are described in Appendix 7 (*Tables 38* and *39*). Recruitment was by clinician referral for two of the studies[116,118] and a mixture of self-referral and clinician referral for the other two studies.[115,117] Number and length of sessions were not clearly described in the studies, although BT Steps consists of nine steps and is used via a telephone. Two studies[117,118] said that BT Steps was to be used daily. Therapist contact was limited to 15 minutes at baseline and three times during the study for Greist.[115] In the Kenwright study,[116] only three patients were screened live; all other contact was by telephone. The professional background of the therapist was not reported for any of the studies.

Therapist time

Total mean therapist contact time was reported for two of the studies and ranged from 16 ± 36 minutes to 99 ± 50.6 minutes.[118]

Study site, follow-up and inclusion/exclusion criteria

Information on study site, follow-up and inclusion/exclusion criteria is presented in Appendix 7 (*Tables 40* and *41*). One study was located entirely in the USA,[115] although the actual setting was not stated, and two studies were located in the UK, both in a clinic/hospital setting. The fourth study[117] took place in two locations in the USA and one in the UK. Length of follow-up was reported in three of the studies,[115–117] with the Greist study[115] having the longest follow-up, at 26 weeks after the first screening visit. Only one of the studies reported any reasons for loss to follow-up, although not all.[118] Two of the studies reported both inclusion and exclusion criteria,[115,117] whereas one reported inclusion but not exclusion criteria[116] and one reported neither clearly.[118]

Patient characteristics

Patient characteristics are presented in Appendix 7 (*Tables 42* and *43*). Three of the four used DSM-III-R criteria for diagnosis[115–117] and one used ICD-10 criteria.[118] All studies had patients mostly between 30 and 40 years of age, although the range in Greist[115] is from 15 to 80 years. All four studies included more or less equal numbers of males and females. Two reported information on ethnicity, with most patients being white.[115,117] All but one study[118] reported socio-economic information and all but one study[117] reported information on patient history. The only information on baseline comparability was from Kenwright,[116] who reported that types of rituals were similar for the two groups of patients in the study.

Outcomes and results

Information on outcomes and results are presented in Appendix 7 (*Tables 44–47*). All studies used the YBOCS to measure improvement. The YBOCS is a self-rated scale with ten items and a score range of 0–40. It covers obsessions and compulsions, with categories for time spent, interference, distress, resistance and control for these. Also used were HAM-D and WSA (both described above) and the Patient Global Improvement (PGI) scale. Two studies included an ITT analysis.[115,118]

In the only RCT comparing BT Steps with TCBT,[115] TCBT was found to be significantly more effective than BT Steps, although both groups showed significant improvement from baseline. Relaxation was found to be ineffective. In the RCT comparing scheduled support with on-demand

support for BT Steps,[116] the scheduled support group showed greater improvement. In the non-comparative trials, Greist[117] reports significant improvement in the 17 out of 40 patients who completed two or more sessions and Bachofen[118] reports that the ten out of the original 23 patients who went on to use the BT Step sessions showed significant improvement. Calculated effect sizes are presented in Appendix 8.

Patient preference, satisfaction and acceptability
Information on patient preference, satisfaction and acceptability is presented in Appendix 7 (*Tables 48* and *49*). Greist[115] reports that patients were more satisfied with clinician-guided therapy than with BT Steps. Little information is provided in the other studies; however, in an additional report on the Bachofen study,[118] Nakagawa[119] reports that patients who had received BT Steps and then went on to clinician-guided care ($n = 9$) were significantly more satisfied with clinician-guided care.

Assessment of effectiveness

Table 8 presents a brief summary of the clinical effectiveness results. Calculated effect sizes are reported here and in more detail in Appendix 8. Twenty studies were included in this review, ten of the included software packages and ten other studies of CCBT. Comparators included TCBT, TAU, WLC, relaxation and varying lengths of treatment. Some studies used more than one comparator.

Studies from previous review
Studies of software packages included in the previous review are listed in *Table 3*.

Beating the Blues
Three studies of BtB were reported in the previous review.[102–104] The Proudfoot RCT[87] listed in *Table 8* for BtB was included in the previous review; however, an additional 107 patients have now been included. Grime[104] recruited all patients via the workplace and a revised form of BtB was used to treat work-related problems. In this study there was improvement on some scores for BtB, but these were not significant at 3 and 6 months. In the initial non-comparative pilot study ($n = 20$),[103] 11 patients completed treatment and showed some improvement from baseline.

FearFighter
For FF, a preliminary report of the Marks RCT[88] for FF was also included in the previous review and no new patients have since been added. The Shaw study[105] was a report of two small non-comparative pilot tests ($n = 17$ and $n = 6$). Conflicting results were obtained in these studies, but some patients seemed to improve.

Cope
As no RCT evidence is available for the present review, the Osgood-Hynes trial[91] is again included.

No studies of either Overcoming Depression or BT Steps were included in the previous review.

OCD effectiveness summary
Four trials of OCD were identified, all using BT Steps. One RCT used TCBT and relaxation as comparators.[115] TCBT was significantly more effective than CCBT, although both groups improved significantly from baseline and both TCBT and CCBT were more effective than relaxation. The other RCT compared two types of support, scheduled and on-demand, both using BT Steps.[116] The scheduled support group showed greater improvement. Finally, in the two non-comparative trials,[117,118] less than half of the patients in both trials completed the BT Steps sessions and those who did showed significant improvement from baseline.

Patient populations
The study populations are divided into three groups although there was some overlap.

Depression/anxiety
Ten studies of CCBT for depression were included in this review, six of included software packages and four other studies. Three studies of BtB were included, two for Cope and one for Overcoming Depression. One of these was an RCT.[87] One found BtB to be more effective than TAU.[87] Both the Cope studies[89,91] and the Overcoming Depression study[93] had no comparator, but showed improvement in symptoms of depression from baseline.

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Three other studies of depression are included in this review,[95,97,100] two of which were RCTs and one was a pseudorandomised trial.[100] Two studies compared CCBT with an information website, one found CCBT to be ineffective[97] and one found both to be effective.[95] The fourth study compared CCBT with a WLC and found CCBT to be effective on some measures.[100]

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TABLE 8 *Summary of clinical effectiveness*

Study	Study type	Total study size	Comparators	Evidence for CCBT
Proudfoot, 2004,[87] BtB	RCT	274	TAU	CCBT more effective than TAU (ES_b= 0.65 for BDI)
Cavanagh, 2004,[84] BtB[a]	Non-comparative trial	219	None	Patients improved from baseline
Marks, 2003,[89] Cope	Non-comparative trial	39	None	Patients improved from baseline (ES_w = 1.24 for BDI)
Osgood Hynes, 1998,[91] Cope	Non-comparative trial	41	None	Patients improved from baseline (ES_w = 1.3 for HAM-D)
Marks, 2004,[88] FF	RCT	93	TCBT, relaxation	Both CCBT and TCBT were effective, but TCBT was more effective (ES_b = –0.04 for WSA and –0.89 for global phobia) and relaxation was not effective
Schneider, 2005,[90] FF	RCT	68	Another CCBT programme	Both were equally effective (ES_b = –0.19 for total phobia), but FF significantly more so at 1 month
Kenwright, 2001,[85] FF	Historical comparative group	85	TCBT	Both groups improved (ES_b= –0.12 for FQ total)
Kenwright, 2004,[86] FF	Comparative trial	27	Internet vs clinic computer CCBT	Both groups improved (ES_b = –0.11 for FQ total)
Whitfield, 2004,[93] Overcoming Depression	Non-comparative trial	20	None	Patients improved from baseline (ES_w = 0.71 for BDI)
Carlbring, 2001[92a]	RCT	41	WLC	CCBT more effective than WLC
Carlbring, 2003[94]	RCT	22	Relaxation	Relaxation somewhat more effective than CCBT (ES_b = 0.04 for BSQ)
Carlbring, 2004,[96]	RCT	49	TCBT	CCBT as effective as TCBT (ES_b = –0.39 for BSQ)
Christensen, 2004[95a]	RCT	525	Information website, attention placebo	Both CCBT and information site effective
Clarke 2002[97]	RCT	299	Information website + usual care	CCBT not effective (ES_b = –0.05 for CESDP)
Fraser, 2001[98]	RCT	30	Three sessions vs six sessions of CCBT	Both groups equally effective (ES_b = –0.14 for BAT and 0.02 for FQ global)
Gilroy, 2003[99]	RCT	45	TCBT, relaxation	All three groups were effective (ES_b = –0.42 vs TCBT and 0.95 vs relaxation for FQ global)
Heading, 2001[101]	RCT	40	TCBT (single session), WLC	TCBT more effective than CCBT and WLC (ES_b = –0.62 for TCBT and 1.01 for relaxation for FQ global)
Yates, 1996[100]	Comparative trial	45	WLC	CCBT effective on some measures (ES_b = 0.89 for HADS-D)
Greist, 2002,[115] BT Step	RCT	218	TCBT, relaxation	TCBT more effective, but both groups improved more than relaxation (ES_b = –0.45 for TCBT and 0.83 for TCBT for YBOCS)
Kenwright, 2005,[116] BT Step	RCT	48	BT Steps scheduled helpline support vs on-demand support	Scheduled support group showed more improvement (ES_b = 0.77 for YBOCS)
Greist 1998,[117] BT Step	Non-comparative	40	None	Those completing (<50%) had significant improvement (ES_w = 0.10 for YBOCS)
Bachofen, 1999,[118] BT Step	Non-comparative	23	None	Those completing (<50%) had significant improvement (ES_w = 0.81 for YBOCS)

[a] Insufficient data were provided in these studies to calculate effect sizes.
ES_b, between-group effect size; ES_w = within-group effect size.

Phobia/panic
Ten studies of CCBT for phobia/panic were included in this review, including four for FF. Of these four, two were RCTs, one showing FF to be as effective as TCBT and more effective than relaxation.[88] The other FF RCT compared FF with another CCBT package and found both CCBT packages to be effective.[90] The other two FF studies were non-randomised studies. One compared CCBT with a historical cohort receiving TCBT and found both to be effective,[85] and the other compared two delivery methods of FF (Internet versus clinic computer) and found that both groups improved.[86]

With regard to the six other studies included for phobia and panic, all were RCTs. Three of these studies, by Carlbring and colleagues, showed CCBT to be more effective than a WLC,[92] somewhat less effective than relaxation[94] and somewhat less effective than TCBT.[96] The final three studies, of CAVE for treatment of spider phobia, found both three and six sessions of CCBT to be effective,[98] TCBT (single session) to be more effective than CCBT (single session) and a WLC[101] and CCBT, relaxation and TCBT to be effective, but TCBT to be more so than CCBT.[99]

OCD
As described above, there were four studies of OCD. One of these was an RCT using TCBT and relaxation as comparators.[115] In this trial, TCBT was significantly more effective than BT Steps and both were more effective than relaxation. In the other RCT, scheduled support was more effective than on-demand support.[116] Finally, in the two non-comparative trials,[117,118] less than half of patients who completed treatment using BT Steps improved from baseline.

Therapy details
As in the last review, the amount of information regarding therapy provided in the studies varied widely. The number of sessions of CCBT ranged from one[100] to nine.[84,87] The length of sessions was not always reported. The professional background of the therapist varied and included nurse therapists, psychologists, practice nurses, psychiatrists, receptionists and lay interviewers. Four studies did not report therapist contact.[92,94,96,97]

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OCD
BT Steps consists of nine steps and was to be used daily. Length of sessions was only reported in one study (8.6 minutes for telephone call).[115] Only one study reported therapist background and stated only that clinicians were involved.[115]

Setting
The 20 studies took place in a variety of settings.[99,100,101] Two were in primary care settings[84,87] Three were provided in a hospital or clinic setting, one for Overcoming Depression[93] and two for FF.[85,88,89,93] In the other two FF studies, access was via the Internet from the patient's home or elsewhere.[86,90] The two Cope studies were accessed via an IVR system accessed from the patient's home.[86,86,91]

Four were in a university or research setting[98–101] and others via home internet.[92,94–97]

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OCD
None of the four BT Steps studies[115–118] reported study setting, as contact was via an IVR system accessed from the patient's home.

Comparators
The results of the 20 (including two AIC) studies are summarised as follows.

TCBT
Five studies used TCBT as a comparator,[85,88,96,99,115] one as a single session.[101] The other studies found both CCBT and TCBT to be effective, although TCBT was more so, apart from in one study[101] which found TCBT to be more effective than CCBT, although both TCBT and CCBT were delivered in a single session in this study. In some cases TCBT involved fewer sessions than might be the case in usual TCBT delivery.

[Commercial-in-confidence information has been removed.]

TAU/WLC
Three studies used a WLC as a comparator[92,100,101] and one used TAU.[97] Three found CCBT to be more effective than TAU/WLC and one found them to be equally effective,[101] although this was a single session of CCBT. One study compared CCBT with TAU plus an information website and found CCBT to be ineffective.[97]

[Commercial-in-confidence information has been removed.]

Relaxation
Three studies compared CCBT with relaxation.[88,94,115] One found relaxation to be less effective,[88] one found relaxation to be more effective[94] and one found relaxation to be equally effective.[99]

Other comparisons included different types of delivery methods, another CCBT package, numbers of sessions and a web-based information website.

OCD
Two RCTs with comparator groups were presented for BT Steps.[115,116] One found TCBT to be more effective than BT Steps[115] and BT Steps to be more effective than relaxation. The other RCT found that scheduled support gave greater improvement than on-demand support.[116]

Patient preference
Five of the 20 studies[84,85,95,97,98] provided no information regarding patient preference, satisfaction and acceptability of treatment. In those studies reporting information most reported that participants felt positively about CCBT, apart from one study,[99] where participants rated TCBT as more acceptable and helpful.

OCD
In one of the OCD trials,[115] patients rated TCBT more positively than CCBT.

Therapist time
Some studies gave no information regarding therapist time.[97] Two studies reported no direct contact with a therapist, all contact being via the Internet[92,94] and the other studies reported therapist time from 5 minutes[99] to 115 ± 44 minutes.[90]

Sponsor submissions
Two of the 20 studies described above form part of the sponsor submissions.[84,93] Other studies presented in the sponsor submissions are described below.

Beating the Blues
Eighteen appendices were included with the BtB submission.[84] These are listed below.

- **Appendix 1**: Proudfoot,[103] included in the previous review.
- **Appendix 2**: Proudfoot,[102] included in the previous review.
- **Appendix 3**: Proudfoot,[87] included above (this covers the same study as Proudfoot[102] plus an additional 107 participants).
- **Appendix 4**: McCrone[120] is an economic evaluation and is reviewed in Chapter 4.
- **Appendix 5**: Cavanagh[84] is a non-comparative study of 219 patients and is included above.
- **Appendix 6**: Cavanagh (unpublished). This study investigates users' reactions to the BtB package. It is a comparison paper to Appendix 5. Participants were diagnosed as having depression, mixed anxiety/depression or anxiety disorder. The location was a range of primary care settings in the UK including GP surgeries, CMHTs and primary care clinical psychology services, in rural and urban settings. Forty per cent of participants were male. Information was collected pretreatment on treatment credibility and expectations and post-treatment on treatment feedback. Two hundred and nineteen participants were recruited into the study, 191 completed the pretreatment data collection and 84 completed treatment feedback questionnaires. The authors' key findings were that participants found the treatment a positive experience and that pretreatment attitudes to CCBT were not predictive of continuation, attrition or outcomes.
- **Appendix 7**: van den Berg (published).[121] This paper describes the introduction of BtB to a secondary care service in the UK. Attrition rates were high, with 45% non-completers, but staff did not consider this a wholly negative finding as non-completers included those who had benefited sufficiently from the early modules and felt that they did not need to complete the full programme. Three case studies are presented. Case 1, a 66-year-old woman with mixed anxiety and depression, dropped out having felt that she had benefited sufficiently to deal with her problems. Case 2, a 53-year-old man with mixed anxiety and depression, completed all sessions and reported that the programme had helped him and that he found the computer program easy to use. Case 3, a 34-year-old woman with generalised anxiety, dropped out reporting that she found some of the sessions useful but did not see the point of interacting with a computer, with which one could not have a conversation.
- **Appendix 8**: Fox (published).[122] This paper describes the introduction of BtB to a GP practice in the UK. The authors' positive observations include that the package offered effective, efficient and immediate access to CBT, and that patients took a leading role in their own therapy. The majority of the participants in

the study responded positively to the package. Some participants found the computer program 'patronising' and 'condescending' and the automatic responses 'offensive' and 'insincere'. The authors describe some of the logistical problems of setting up such a service in a busy GP practice and also recommend that the assistant must be knowledgeable in CBT.

- **Appendix 9**: Grundy (unpublished). This small study evaluates the effectiveness and acceptability of BtB for anxiety and/or depression. Eight participants were randomly selected from a cohort of 15 patients who had completed a course of BtB provided by a local CMHT in Wales. Participants showed a significant pre–post-treatment decrease in their HADS score and found the package helpful and useful.
- **Appendix 10**: HMP Moorland (unpublished). This is a small study of seven inmates at HMP Moorland who used BtB for anxiety and/or depression. There were improvements in self-reported anxiety and depression ratings over 8 weeks, which were statistically significant for depression but not for anxiety. The participants reported that the programme was 'a little better' than other treatments, and that they were happy to use the computer and found it easy to use.
- **Appendix 11**: Ryden (unpublished). This study uses data from two previous trials (reported in Proudfoot[87]) to test whether patient characteristics are predictive of the effectiveness of CCBT for depression at follow-up. The total sample size was 274 and the characteristics included treatment acceptability, education, demographics, and duration and severity of depression. The authors found that none of the characteristics was a reliable predictor of treatment outcome.
- **Appendix 12**: Mairs (unpublished). This is a brief report of the computer-aided therapy for anxiety and depression in a GP practice setting. Fifty-one participants began treatment and 20 completed all eight sessions. There were significant decreases in BDI and BAI scores pretreatment to post-treatment, although data were not provided. There were favourable comments from both participants and GPs.
- **Appendix 13**: author not stated. This is a small study, with eight participants, of self-help group workers' reactions to the use of the package with their clients. All felt that BtB was a helpful programme and easy to use. Five of the eight workers thought that it would have a long-term impact on their clients, all said that they would like to see the package available in their community and seven would recommend the package to people in their community.
- **Appendix 14**: Cavanagh and Shapiro (published).[123] This paper contains a review of computer treatment for mental disorders and a meta-analysis of treatment effectiveness for depression. This analysis is based on data in Kaltenthaler;[124] however, studies have been combined inappropriately as they include different comparators, patient populations and study designs. A discussion of the cost-effectiveness of CCBT is also included.
- **Appendix 15**: author not stated. This is a single-sheet report of a survey of healthcare sites that have used BtB. Only 37 of the 87 NHS sites responded to the survey. The report gives only limited information. User and service outcomes are both described as 'generally positive', with no further details.
- **Appendix 16**: Sawyer (unpublished). This a brief report of pretreatment and post-treatment outcomes for BtB offered at a tertiary CBT service in the UK between May 2001 and April 2004. In total, 333 patients (197 female) used the service, although data collection was variable between outcomes. Significant improvements were recorded for BDI and BAI scores, self-rated anxiety and depression, and problem distress ratings. Very few data were provided regarding details such as study population.
- **Appendix 17**: Clash (unpublished). The authors used data from a previous study, by Proudfoot,[102] to test the effectiveness and suitability of the package for subgroups. This is a partial report of the ongoing study. The current findings are that participants found the package useful, relevant and easy to use.
- **Appendix 18**: Proudfoot (published).[125] This paper is a general overview of the literature on CCBT for anxiety and depression.

BT Steps

Five studies are listed in the sponsor submission,[126] all of which are included above, apart from Marks[127] which covers the same study as Greist[117] and Bachofen.[118] Kenwright,[116] included above, is published. BT Steps is delivered in a telephone IVR form at present. No data were provided of BT Steps used in an Internet form.

Cope

Studies of the clinical effectiveness of Cope listed in the sponsor submission include Osgood-Hynes,[91] which was included in the first review and above, Gega (case studies)[156] and Marks.[89] Marks[89] is a non-comparative trial and included above. All were of Cope delivered in a telephone IVR form. No data were provided of Cope used in an Internet form.

FearFighter

The sponsor submission lists five studies of clinical effectiveness. Shaw[105] was included in the previous review. Marks[88] is included above and early unpublished data from this trial were also included in the previous review. Kenwright[86] is also included above. FF data from Marks[89] are not included in this review as these patients are also presented in Kenwright.[86] Kenwright[86] and Schneider[90] are the only data provided on FF delivered via the Internet.

Three appendices were included with the FF sponsor submission.

- **Appendix 1**: Schneider[90] is included above.
- **Appendix 2**: Gega (unpublished) covers several software packages. The paper describes the testing of a screening questionnaire to detect people who might be suitable candidates for treatment by CCBT. The authors conclude that, although it needs further refinement, the screening questionnaire could be used to channel patients with anxiety/depression to CBT or CCBT.
- **Appendix 3**: Mataix-Cols (unpublished) covers several software packages and investigates differences in outcome in CCBT between participants referred from different sources: self-referrals, GP referrals and referrals from mental healthcare professionals. The major findings were that although all three groups showed improvement, the GP referrals improved the most and the mental healthcare professional referrals the least.

Overcoming Depression

Two trials are mentioned in the Overcoming Depression sponsor submission.[93] One is of an ongoing RCT comparing Overcoming Depression with a WLC group. Data on this trial were requested and not received by the assessment team. The second trial is a non-comparative pilot study by Whitfield[93] and is included above.

Chapter 4
Economic analysis

This section is in two parts. The first is a review of the literature and the evidence submitted by the sponsors for each of the products being reviewed. The second presents in detail cost-effectiveness models of the five products across the three mental health conditions. These models have been based on sponsors' submissions, advice of local experts and evidence on key parameter values such as throughput, utility values and costs from published sources. The results are a series of incremental cost per quality-adjusted life-year (QALY) analyses and associated cost-effectiveness acceptability curves (CEACs) for each product under a range of purchasing scenarios.

Search and review of published literature

Searches were undertaken to identify any economic studies relating to CCBT. Full searches were undertaken using the strategies outlined in Appendix 4, which included all articles found by the clinical effectiveness searches supplemented by searches for economic evaluations using terms set out in Appendix 4, along with the population search terms for these mental health conditions. All electronic data sets set out in Appendix 1 were searched, including the health economics databases of NHS EED and OHE HEED.

As reported in the clinical effectiveness section, the general CCBT search identified 437 articles. The economics search identified a further 17 papers. Two reviewers read abstracts of all 454 papers and none of them contained economic studies. Although some did contain some relevant information, none met the inclusion criteria. The BtB sponsor's submission identified a paper that was not published at the start of the review, but has since been published.[120]

Review of submissions

Beating the Blues

The sponsor's submission included a paper presenting a cost-effectiveness analysis of BtB against treatment as usual[120] and a costing of the intervention.

Cost-effectiveness

The stated aim of the McCrone paper[120] was to determine the cost-effectiveness of CCBT using BtB compared with TAU among primary care patients with anxiety and/or depression. It is an economic evaluation alongside the Proudfoot RCT. The viewpoint for the economic analysis was that of the NHS (although indirect costs were also calculated).

The CCBT intervention included the BtB package, with patients being allowed to receive other forms of treatment as per usual from the GP, with the exception of face-to-face counselling or other psychological input. The TAU intervention comprised a variety of interventions, including discussions with a GP, referral to a counsellor, practice nurse or mental health professional, and treatment of physical conditions.

The trial recruited 274 patients with anxiety and/or depression from seven general practices in the south-east of England and randomised them to receive either CCBT (146 patients) or TAU (128 patients). This trial is included in the clinical effectiveness review.[84] Patient outcomes were measured using three illness-specific measures: the Beck Depression Inventory (BDI); the Beck Anxiety Inventory (BAI); and the Work and Social Adjustment (WSA) scale. Patients completed these scales before and after treatment, and then at 1 month, 3 months and 6 months post-treatment.

The results indicated that CCBT led to greater improvement than TAU on all three measures. This improvement was statistically and clinically significant and was sustained at the 6-month follow-up. BtB resulted in a mean reduction in the BDI relative to TAU of 3.5 points [95% confidence interval (CI) 0.6 to 6.4]. No interactions of CCBT with concomitant pharmacotherapy or duration of illness were found, although the authors acknowledge that the sample size was too small to rule this out.

The chosen form of economic analysis was cost-effectiveness analysis in which the data on reported clinical outcomes were combined with cost data to produce a cost per point reduction in the BDI and a cost per symptom-free day. A cost–utility analysis was undertaken by applying a

utility value to days with and without symptoms. Data on resource use were collected prospectively alongside the trial. The costs of the BtB intervention were supplied by the sponsor (see below for a critical review) and other resources were costed using appropriate unit costs. It covered a wide range of NHS resource usage. Estimates were also made of the indirect costs of lost production.

Resource-use data were collected for 6 months before study entry and for the 8 month duration of the study. Complete data were available for 138 CCBT and 123 TAU patients. Comparisons were made between the mean costs of CCBT and TAU using a bootstrapping technique to generate 95% confidence intervals. Costs were reported separately with and without indirect costs.

An ITT analysis revealed that the mean service cost for CCBT was £397 compared with £357 for TAU, resulting in an incremental service cost of £40 (90% CI –£28 to £148). Total costs including lost employment costs were less for the BtB group, at £533 compared with £900 for TAU.

Based on the BDI, the mean number of depression-free days was 61 (standard deviation 67.1) for TAU compared with 89.7 (74.2) for CCBT over the 8 months of the trial follow-up. The figure for depression days of 0.59 was taken from a published review of utilities studies of patients with depression[128] and the figure of 1.0 for depression-free days was assumed. These figures resulted in an estimated QALY gain of 0.032. While this QALY gain was small, it translates into a cost per QALY of £1250. Assuming just £5 per depressed-free day resulted in a 90% chance of BtB being cost-effective. Looked at another way, valuing a one-unit improvement in the BDI at £40 results in an 81% chance of BtB being cost-effective. The authors concluded that CCBT is more cost-effective than TAU.

Sensitivity analysis was carried out around the unit cost of the BtB. Lower and upper values of £50 and £150, respectively, were considered. When the higher figure was used, the cost difference remained statistically insignificant. Justification for the range used in the sensitivity analysis was that this was the range of costs that could be expected from the manufacturer. No sensitivity analysis was carried out on the other costs, such as staff costs. They also looked at a range of possible values for the health gains, and even zero resulted in a 45% chance of being cost-effective.

This paper is the only economic evaluation of CCBT currently available in the literature. It has been carried out thoroughly and is based on a well-conducted RCT with good internal validity. Its weaknesses lie in three main areas.

One weakness is the costing for the intervention that was given to the authors by the sponsor. The basis for the £100 estimate used by McCrone[120] is provided in the sponsor's submission. A more important weakness in these cost estimates is the assumed throughput levels. The cost per patient depends crucially on the number of patients treated by each copy of BtB each year. However, the throughput levels are based on unrealistic assumptions about the number of cases likely to come from a typical general practice. The costings have been modified later in this report based on more realistic estimates of throughput at the practice level.

The other key weakness in the McCrone[120] paper is the estimation of QALYs. The authors acknowledge that their approach was very indirect. Furthermore, it used a utility value from a study that combined the values from a number of different published studies, using a range of sources and methods, many of which would not meet the NICE reference case for economic evaluation. A more direct approach has been developed for the TAR model based on the BDI.

Finally, the analysis is limited to 8 months, whereas the benefits of treatment are likely to last longer than this. This will underestimate the likely size of benefit and so the TAR model attempts to extend the period of benefit.

Costs of intervention

The sponsor's costing of BtB covers more than just the licence cost, to include hardware, capital overheads and clinical helper. It excludes some items, such as training and screening, but these are shown in the TAR costings to be comparatively small items. The licence fee is the largest component and depends on the number of copies purchased. For one machine the cost per treatment was £103 in the first year and then £96 in subsequent years. For six, 20 and 50 copies the costs are £77 and £70, £60 and £53, and £56 and £49, respectively. The £100 pounds used in the McCrone[120] study may be an overestimate according to these figures.

To obtain a cost per patient, the sponsor assumes that the level of throughput will be 100 patients per practice. This assumes that around 50% of the

capacity of a computer will be used. [Based on 30 hours per week, 30 × 50 hours per year (i.e. 1500), and allowing for eight sessions plus 15 minutes' introduction for a full course of BtB. These assumptions result in 187 patients.] However, the assumption of 100 patients coming forward each year in practices of one to five GPs is based on the following assumptions: average list sizes of 10,000 patients; a 10% prevalence of depression; and 10% of depressed patients being treated by CCBT each year. There is considerable uncertainty surrounding these assumptions.

The assumed list size is high. Practices with between one to five GPs have an average of three GPs and practices of six to ten have an average of eight GPs, which result in mean list sizes of around 5000 and 14,000, respectively (General Medical Statistics: England and Wales, 2002). The assumption of a 10% prevalence of depression is reasonable and is similar to estimates from the ONS Morbidity Survey (ONS, 2000),[129] but a major problem is that many of these do not come to the attention of a GP.[130] It is not clear whether the 10% prevalence figure takes sufficient account of this problem, but the proportion of known cases may be as low as 5%. Finally, the assumption that 10% of these will take up the service is an assumption and in practice it may be very different. Currently, just one in eight patients with neurotic conditions are being treated in the NHS at any point in time. The TAR model presented below assumes more realistic levels of throughput.

Cope (ST Solutions)

There was no formal analysis of cost-effectiveness in the sponsor's submission. However, the sponsor provided useful estimates of the likely costs of Cope at different organisational levels, including practice with one to five GPs, practice with five to ten GPs, primary care trust (PCT), strategic health authority, NHS Purchasing and Supply Agency (PASA) and NHS England, Wales and Scotland.

As for BtB, the licence fee is fixed at each organisational level so the cost per patient depends on the number of patients likely to use each copy. The sponsor makes the same assumptions about the throughput for Cope as for BtB. All of the criticisms made above are relevant here.

Overcoming Depression

There was no formal analysis of cost-effectiveness in the sponsor's submission. Indeed, the submission contained no cost information. ScHARR contacted the manufacturers for information and were given a simple price tariff of £500 for a single general practice and £50 for subsequent copies in a single practice. PCTs purchasing the product on behalf of their practices would be entitled to 20% discount on these charges. There were no assumptions about likely throughput levels.

FearFighter (ST Solutions)

There was no formal analysis of cost-effectiveness in the sponsor's submission. ST solutions provided the same information about the likely costs of FF as for Cope.

BT Steps (ST Solutions)

There was no formal analysis of cost-effectiveness in the sponsor's submission. ST Solutions provided the same information about the likely costs of BT Steps as for Cope and FF.

For BT Steps the throughput of treated patients was predicted to be lower in the sponsor's submission than for COPE and FF. The number of sufferers with OCD is known to be much lower than depression and anxiety, at around 2%. Working this through results in 20 treated patients per year for practices with one to five GPs and 40 for those with six to ten GPs. At PCT level, it is assumed in the submission that there will be 400 patients. These assumptions result in average costs per treated case of £90–250 depending on organisational level.

As for Cope, this assumes rather large list sizes. The assumption of a 2% prevalence of OCD is similar to estimates from the ONS Morbidity Survey,[129] but there is a problem that many of these do not come to the attention of a GP.[130] It is not clear whether the 2% prevalence figure takes sufficient account of this problem, but the proportion of known cases may be half of this. Finally, the assumption that 10% of these will take up the service is an assumption and in practice it may be very different. The TAR model presented below assumes more realistic throughput levels.

Cost-effectiveness and cost–utility

Depression model

The question addressed by this model is what would be the likely impact of each CCBT product on the costs and effectiveness of treating patients with depression in a primary care setting compared with TAU.

Structure

The three products share the same basic model structure. The main model is a decision tree model comparing two arms, CCBT and TAU, over an 18-month period. CCBT is one of the products and TAU amounts to standard care in primary care. The latter is difficult to specify, so this model has used the treatment received in the Proudfoot trial[87] as representing TAU in the NHS. TAU patients in this trial continued to visit their GP, receive medication and be referred to a specialist, although they were not receiving psychotherapy at the time of entering the trial. TAU is assumed to be the same across all three products. For BtB another arm has been examined in the model for TCBT using the results of the trial.

[Commercial-in-confidence information has been removed.]

The CCBT arm of the decision tree is shown in *Figure 2*. Patients are assumed to arrive in primary care for treatment with either mild to moderate, moderate to severe or severe depression. These are widely used categories in the depression literature that link with existing practice and have been operationalised using measures such as the BDI. The distribution between these categories will depend on the patients attending the practice. The main model results are based on the distribution in the Proudfoot trial, but a subgroup analysis has been performed to examine variation in cost-effectiveness by severity of depression.

Patients are given either CCBT or TAU over a 2-month period (*Figure 2*). A proportion of these are assumed to complete the treatment. Patients who comply with treatment are then assumed to be distributed across the four depression severity categories depending on the success of the intervention: minimal, mild to moderate, moderate to severe and severe. For BtB and TAU the transition probabilities between the four severity categories before and after treatment have been estimated from individual-level data provided by McCrone[120] and for Overcoming Depression from Whitfield.[93] For Cope these have been estimated from mean values presented in published studies. Those who do not complete CCBT are assumed to be offered TAU and this results in a set of transition probabilities between disease severity categories achieved in the Proudfoot trial.

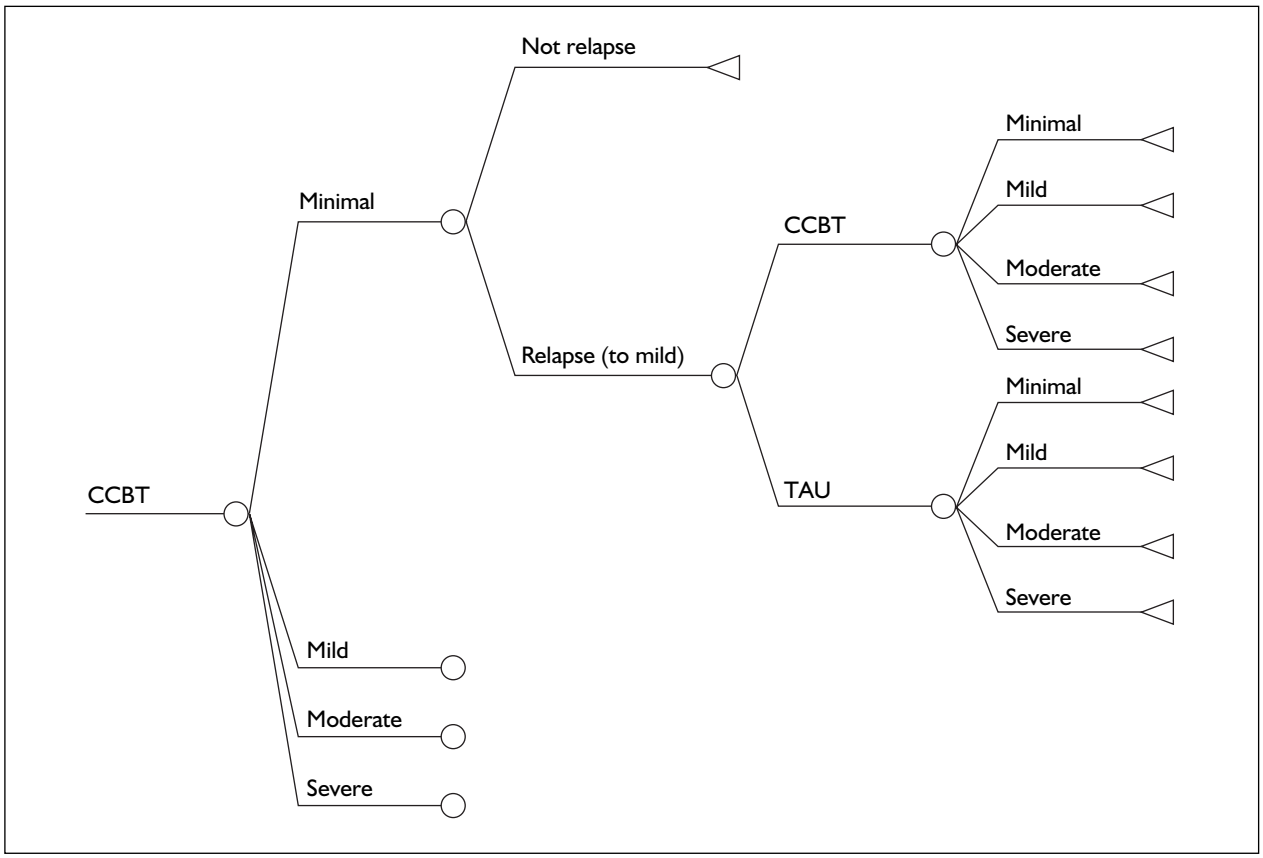

FIGURE 2 *Partial decision tree for depression: the CCBT arm*

Patients are assumed to spend 6 months in their new severity state following treatment. At the end of this 6-month period, which is 8 months after treatment began, patients who improved may stay the same or relapse. The rate of relapse in each arm is taken from the general literature on CBT. If they relapse, then at 10 months after initial treatment they will be offered either another course of CCBT or TAU in the CCBT arm. At this second cycle, patients are assumed to transit between severity categories as before over the next 2 months and then stabilise for the remaining 6 months of the model. If they do not relapse they stay in the post-retreatment severity category. If they did not improve in the first place (they are in moderate or severe categories) they also stay in the same severity category.

Parameter assumptions

Compliance

The rate of non-compliance is assumed to be 30%. This is similar to the dropout rates of clinical trials in this area and submissions on CCBT, including the Proudfoot trial. Although the dropouts in these cases were often those that were lost to follow-up for a range of reasons, one of these would be compliance. People who drop out from CCBT are assumed to receive TAU.

Transition probabilities

As this is a decision-analytic model, it has been necessary to define a set of health states. The BDI has been selected for this purpose since it is the primary outcome measure in the Proudfoot study and has been used in studies of Cope and Overcoming Depression. It is also useful because there are well-established cut-offs used in the literature relating to the BDI to the four severity categories used in the economic model, of minimal (≤ 9), mild (10–18), moderate (19–29) and severe (30–63).[131]

A crucial driver for the depression models has been the rates of transitions between depression severity categories. For BtB these have been estimated directly from Proudfoot trial data. Using individual-level data, rates of transition have been estimated for the four depression categories between the pretreatment and 2-months post-treatment assessment. The transition matrices are presented for BtB and TAU in Appendix 9. However, for BtB these transition probabilities were not used in the first cycle because analytical data were available. So, for the first cycle, the model uses pretreatment mean quality of life (QoL) scores and then the actual post treatment distribution. The estimated transition probabilities were, however, used for the second cycle. For Overcoming Depression it was not possible to estimate transition probabilities because of small numbers.

For Cope no individual-level data were available and so values were interpolated using the mean scores before and after treatment. This interpolation involves placing a normal distribution around the mean to estimate the distribution of patients across the four severity categories before and after treatment. It has not been possible to estimate transition probabilities as such, since the precise transfer of each patient was not known. However, the numbers in each category post-treatment can be estimated.

Relapse rates

It was assumed that the relapse rate for CCBT equals the relapse rate for traditional CBT, which was taken from Thase.[132] The relapse was defined as meeting the DSM-III-R criteria for major depression and having a HAM-d score of 15 or more. This article estimated relapse rates for partially recovered patients and the relapse rate for fully recovered patients. In the model a relapse was defined as someone who moves down one category of severity. This includes someone who was fully recovered and moved from minimal to mild or a partially recovered person moving from mild to moderate or moderate to severe. Relapse rates are assumed to be the same for TAU and CCBT.

Seventy per cent of the patients who relapse after being treated successfully with CCBT are assumed to have a second cycle of CCBT. The remaining 30% will prefer TAU. The same rates are applied to people who are mild after the first cycle of CCBT.

Longevity

A crucial component of these models is the assumption about the longevity of any gain. Given that the Proudfoot study showed that the improvements in BDI were sustained between 2 and 8 months from recruitment, it can be safely assumed that the benefits last for at least 8 months. It must also be the case that a day later this gain has not entirely disappeared. However, the longevity of the treatment effect is not known. In this model, patients are assumed either to relapse at 8 months or to continue in their post-treatment health states for another cycle. In both cases the model lasts for 18 months.

It should be noted that relapse has already been included in the model for the first 8 months since

this should have been incorporated in the Proudfoot data in terms of mean BDI changes. The authors accept that assuming that relapse occurs at 8 months after treatment begins is somewhat artificial and involves some double counting. It is also artificial to assume no benefit at the end of the second cycle at 18 months. However, these assumptions enable some account to be taken of the longer term benefit.

Those in the CCBT arm who relapse are assumed to repeat CCBT in 70% of cases and the remainder have TAU. The transition probabilities associated with TAU are the same as cycle 1 (i.e. taken from the Proudfoot study). For those in a treatment arm, it is assumed for simplicity that the transitions are the same for all the CCBT packages as for BtB. Transition rates were not available for Cope and the numbers in the trial of Overcoming Depression are too small to estimate transition rates between all four severity categories. This assumption is favourable to Cope and Overcoming Depression since patients receiving these two forms of CCBT had smaller gains on the BDI than BtB.

Given the weaknesses in the assumptions about longevity it has been important to express this in the distributions used in the probabilistic sensitivity analysis (PSA). However, to test the sensitivity of these assumptions, the model has been run for one cycle only, assuming no benefit after the 8-month follow-up of the Proudfoot study.

Quality of life data

A systematic review was undertaken of published health state values in patients with depression. This is reported in detail in Appendix 10. The main finding was that published studies did not use the NICE reference case for economic evaluation of a generic preference-based measure valued using UK general population values. Furthermore, the published data did not link to the quality of life measures used in the studies of CCBT. A search for studies using generic preference-based measures in depression and anxiety identified the PHASE RCT of supervised self-help CBT in primary care,[54] which used the EQ-5D and CORE-OM. This provided a useful source of data because the patients were recruited from 17 primary healthcare teams and were broadly representative of the NHS. However, it used the CORE-OM rather than the BDI, but it is similar in many ways to the BDI, and CORE-OM has been mapped onto the BDI by the developer of the CORE-OM (Barkham, University of Leeds: personal communication, 2004). The mapping function was fitted to provide a BDI score on each case.

The Richards study[54] provided data on 62 patients with BDI total scores and EQ-5D data. An initial simple regression model indicated that the relationship between the BDI score and the EQ-5D was not linear, so it was decided to estimate mean (SD) scores for three depression categories of mild to moderate, moderate to severe and severe, of 0.78 (0.20), 0.58 (0.31) and 0.38 (0.32), respectively. As in the trial, there were no patients with scores in the minimal category since by definition they would not be suitable for the trial. It was assumed that patients in this minimal category would have age- and gender-matched normal scores for this group of 0.88 (0.22).[133] As discussed in Appendix 10, these scores are comparable to those obtained in other studies on health state values on similar groups of patients.

Cost data

CCBT has an impact on costs in two ways. One is from the cost of the intervention itself. The other comes from the fact that it alters the distribution of patients between depression severity categories, which in turn has implications for the use of services.

Cost of the intervention

The provision of CCBT results in costs from the following: licence fees, computer hardware, screening of patients for suitability, clinical support, capital overheads (for facilities for computer and clinician) and the training of staff. While there are a number of important differences in the costs of the three products, the basic principles of costing are very similar (see Appendix 11 for details).

Each product comes with a licence fee tariff, with all products offering a fixed fee for purchase at the level of general practice. Cope also offers licences at different organisational levels: PCT, strategic health authority, NHD PASA consortium and country (England, Wales and Scotland). The cost per GP and per patient is substantially less at these higher levels of purchase. For this costing exercise, it has been decided to limit the costings to general practice and PCT level, since it seems unlikely that the NHS would purchase these products above practice or PCT levels. To do so would be a major break with current purchasing patterns.

The licence fee is fixed, so the cost per patient depends on the number of patients likely to use

each copy. The assumptions used in the submissions were unrealistically high and more realistic values have been used for actual practice list size and the numbers of prevalent cases known to the GP (Appendix 11). The number of treated patients in a one to five GP practice is expected to be 25–50 and for a five to ten GP practice 40–80. The costings are based on midpoint estimates of 37.5 and 60 patients, respectively, at practice level. For PCTs the number of patients likely to be treated is 825–1650 rather than 2000, with a mid-point estimate of 1237.5.

For BtB, Overcoming Depression and Cope, practices will need to provide a computer and space for it. Cope, however, does not require a machine to be available in general practice since patients can access it over the Internet at other locations, such as at home or in a public library, and so this latter option has also been costed.

For BtB and Overcoming Depression, there will be support provided by a professional to help the patients to use the computer program. This has been estimated in BtB to be equivalent to about an hour of time over the duration of treatment (which can be up to 3 months). For Cope the manufacturer recommends their products be supported by a brief helpline. The manufacturer assumes a total of 1-hour support per patient over the 3 months of therapy. These have been costed using NHS costs allowing for on-costs and overheads. All products are assumed to have no additional impact on use of GP time, although there is an additional element for the time for staff involved in training for the use of CCBT in their practice. There is also additional time spent assessing the suitability of the patient for CCBT.

Other costs

CCBT has an impact on the severity level of depression compared with TAU, which has consequences for the use of other services. Analysis of the economic data provided by McCrone[120] (personal communication) from the Proudfoot study[87] found that mean costs vary by severity level, but that the treatment arm did not make a significant independent contribution. Combined post-treatment mean costs by severity have been used in the model and these are £122.50 (85.74) for minimal, £253.50 (275.16) for mild, £274.64 (505.07) for moderate and £423.93 (741.93) for severe depression.

Discounting

Costs and outcomes (QALYs) were discounted at the recommended Treasury rate of 3.5% and a sensitivity analysis was performed using the old Department of Health rates of 1.5% for QALYs and 6% for costs.

Analysis

The cost-effectiveness results are presented in terms of incremental cost per QALY of each product. The uncertainty around parameter inputs is presented in Appendix 12. To handle this uncertainty in the most efficient way a PSA was performed to investigate uncertainty around the key parameters. The probabilistic sensitivity analysis consists of 10,000 runs, where each of the random parameters is drawn from its own distribution to give a cost-effectiveness of each treatment. The probabilistic sensitivity analysis is intended to capture most of the uncertainty in the model; however, one variable that is not captured is the organisational level at which the NHS would purchase CCBT. This will be explored in univariate sensitivity analysis along with other key parameters. Uncertainty around longevity will also be explored by removing any benefit beyond 8 months. Finally, a subgroup analysis was undertaken using the BtB model to examine possible variation in cost-effectiveness by severity.

Results

Beating the Blues model

Costs were estimated for a single-copy licence and a 20-copy licence (Appendix 11). The single-copy licence is equivalent to a one to five GP practice purchasing the product. The 20-copy licence is equivalent to a PCT purchasing a licence (although it is not clear in the submission whether this is available to PCTs). The estimated cost of these is £219.30 and £104.62, respectively, per treated patient. These estimates come with large ranges, reflecting the uncertainties around the unit costs and, more importantly, the uncertainties around the expected numbers of patients treated at practice level.

The transition probabilities, quality of life and costs used in the economic model on BtB are shown in Appendices 9–11. Means and distributions are presented along with data sources.

BtB was found to be more effective and more costly than TAU. The incremental cost per QALY of BtB over TAU is £1801 (*Table 9*). *Figure 3* shows the CEAC. The probability of accepting BtB over TAU at 30,000 is 86.8%.

The PSA is intended to capture most of the uncertainty in the model, but some variables were

TABLE 9 *Cost-effectiveness of BtB*

Strategy	Cost (£)	Incremental cost (£)	Effectiveness	Incremental effectiveness	ICER
TAU	437		1.02		
BtB	584	147	1.10	0.08	1801

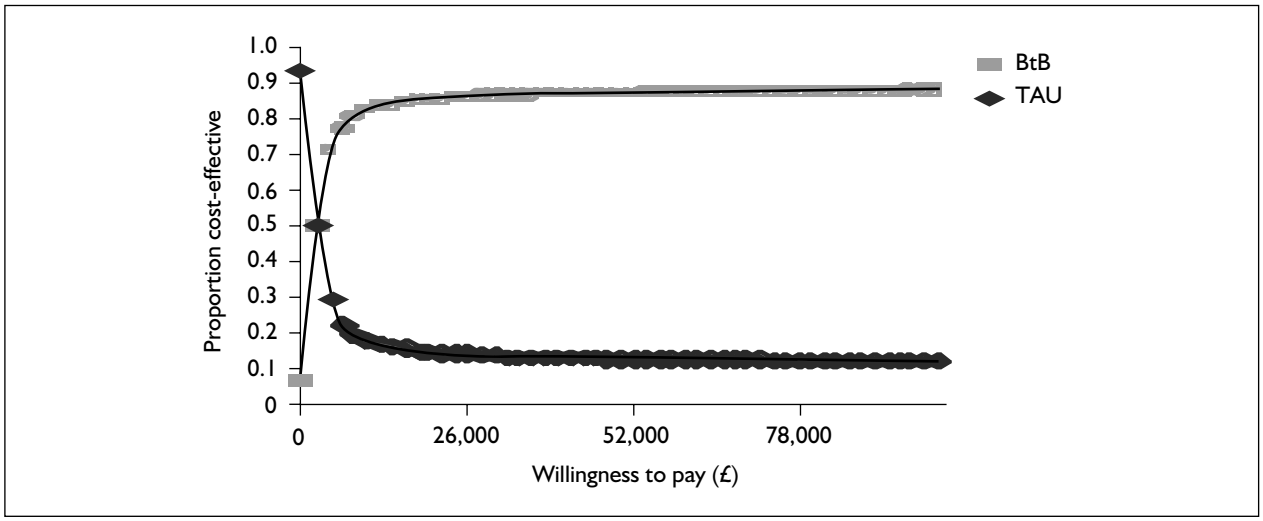

FIGURE 3 *CEAC for BtB*

TABLE 10 *Cost-effectiveness by severity category*

Strategy	Cost (£)	Incremental cost (£)	Effectiveness	Incremental effectiveness	ICER
Mild to moderate					
TAU	366		1.13		
BtB	497	131	1.20	0.07	1802
Moderate to severe					
TAU	436		1.02		
BtB	593	157	1.11	0.08	1844
Severe					
TAU	546		0.86		
BtB	700	154	0.95	0.08	1851

explored in a one-way sensitivity analysis. Using the discount rates of 6% for costs and 1.5% for QALYs results in little change to the cost per QALY (i.e. £1709). The above analysis assumes that the licence would be held at practice level, but it might be offered to PCTs at the lower rate for 20 copies. If this were the case, then the incremental cost per QALY would fall to £415. Finally, running the model for one cycle (i.e. limiting it to the duration of the Proudfoot trial) increases the cost per QALY to £4961.

[Commercial-in-confidence information has been removed.]

Subgroup analysis

The incremental cost per QALY was estimated for patients presenting with mild to moderate, moderate to severe and severe depression at baseline using data from the Proudfoot trial. There were some patients with minimal depression, but these were excluded from this analysis. Severity level-specific transition probabilities shown in Appendix 12 were used; otherwise the parameter values are the same. The results in *Table 10* show that the mild to moderate group has the lowest mean incremental cost per QALY of £1802, but there is little difference between the groups.

TABLE 11 *Cost-effectiveness of Cope*

Strategy	Cost (£)	Incremental cost (£)	Effectiveness	Incremental effectiveness	ICER
TAU	437		1.02		
Cope	630	193	1.05	0.03	7139

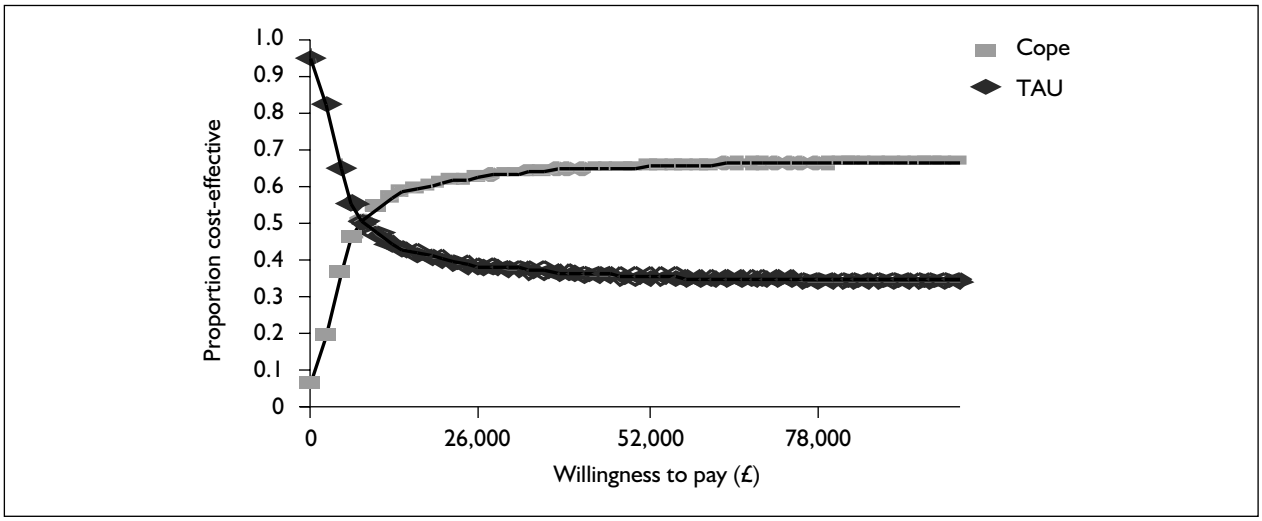

FIGURE 4 *CEAC for Cope*

Cope

Parameter values: costs

Two costings were undertaken for practice-level licences, one assuming that the practice will have to provide computer access and the other assuming that patients can access the Internet from home or some other location that is cost free to the NHS (Appendix 11). Both options include a cost for a telephone support line for 1 hour per patient for a course of CCBT. The estimated cost is £171.30 for no practice computer access and £195.86 with practice computer access. At the PCT level, the cost falls to £110.53. These estimates come with large ranges, reflecting the uncertainties around the unit costs and, more importantly, the uncertainties around the expected numbers of patients treated at practice level.

The company will also be marketing IVR Cope, but only at strategic health authority or national level. It is unlikely that the NHS would be willing to buy this at these organisational levels and so this option has not been costed. Furthermore, the licence would cost 40% more than the computer-based version of Cope.

Transition probabilities

Data on the probability of being in one of the four states post-therapy were estimated from the Marks trial.[89] An individual-level data set was not available for this trial, so assumptions were made about the likely distribution around the main values reported before and after treatment from the study. It was assumed that the distribution around the mean BDI post-treatment values would be a normal distribution. The BDI cut-off points were used to calculate the proportions in each severity category. The cost of the licence chosen in this model is the one calculated on a GP practice level (Appendix 11).

The model assumes a comparable starting point to BtB. The mean TAU arm is the same as BtB, but with a larger range of uncertainty reflecting the smaller number in the Cope study. All the other data used in the model are the same as for BtB.

Results

Cope was found to be more effective and more costly than TAU. The incremental cost per QALY of Cope over TAU is £7139 (*Table 11*). *Figure 4* shows the CEAC as a summary of the 10,000 runs from the model. At £30,000 per QALY the probability of acceptance stabilises at 62.6%.

The above analysis assumes that the licence would be at a practice level, but it might be offered to PCTs at the lower rate. If this were the case, then the incremental cost per QALY would be £3915. The discount rate has little impact at £6078 per

TABLE 12 *Cost-effectiveness of Overcoming Depression*

Strategy	Cost (£)	Incremental cost (£)	Effectiveness	Incremental effectiveness	ICER
TAU	437		1.01		
Overcoming Depression	501	64	1.03	0.01	5391

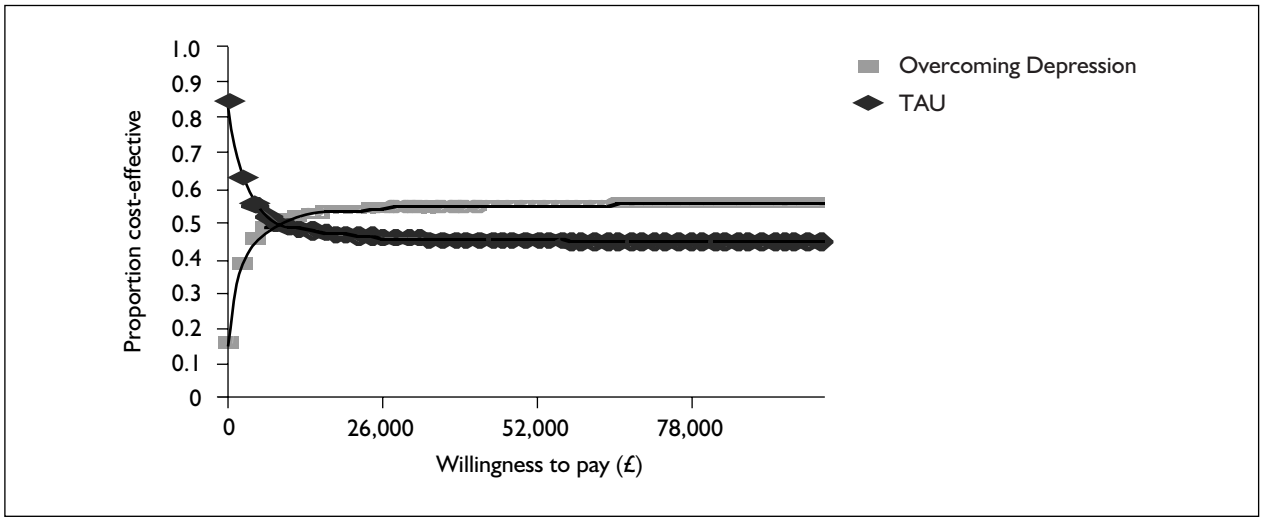

FIGURE 5 *CEAC for Overcoming Depression*

QALY. Limiting the model to one cycle increases the cost per QALY to £16,469.

Overcoming Depression

Costs

Costs were estimated for a single licence with one and two copies and a PCT licence of 20 copies (Appendix 11). The sponsor offers the product at £500 for a licence to a practice and £50 for subsequent copies. PCTs can bulk buy on behalf of practices at a discount and for this costing it is assumed that they buy 20 copies, one for each practice, with a 20% discount (Taylor-Parker, Calypso: personal communication, 2004). The estimated cost of these options is £72.64 and £66.64 per treated patient, respectively. This is the cheapest CCBT product for this condition.

These estimates come with large ranges reflecting the uncertainties around the unit costs and more importantly, the uncertainties around the expected numbers of patients treated at practice level.

Transition probabilities

The probability of being in one of the four states post-therapy was estimated from individual-level study data provided by Whitfield.[93] However, it was not possible to estimate transitions between pretreatment and post-treatment states because the numbers available were too small to populate a transition matrix. Instead, a pretreatment mean health state value was used in the model. The BDI score of patients in the Whitfield study[93] before entering in the clinical trial is slightly higher than for Cope and BtB, reflecting more severe cases of depression. All other data are the same as in BtB and Cope.

Results

Overcoming Depression was found to be more effective and more costly than TAU. The incremental cost per QALY of Overcoming Depression over TAU is £5391 (*Table 12*). A probabilistic sensitivity analysis was performed to investigate uncertainty around the key parameters, as before. The distributions used around each variable are shown in Appendix 10. The very low sample size of the main study again increased the range of values. No other allowance was made for the uncertainties from using the TAU from another study.

Figure 5 shows the CEAC. At £30,000 per QALY, the probability of accepting Overcoming Depression over TAU is 54.4%.

One variable that is not in the PSA is the organisational level at which the NHS would purchase the product. The above analysis assumes that it would be at a practice level, but it might be offered to PCTs at the lower rate. If this were the case, then the incremental cost per QALY would be £4856. At the old discount rates of 6% for costs and 1.5% for QALYs, the cost per is £5343. Limiting the model to one cycle increases the cost per QALY to £26,087.

Discussion

The main limitations lie in the assumptions on compliance rates, rates of relapse, clinical effectiveness and throughput.

It was assumed that the probability of non-compliance is 30%. It might be that this rate should be even higher as CCBT is still a new intervention. However, this is not likely to have a large impact on the final cost per QALY. It was assumed that the relapse rate for CCBT is the same as traditional CBT. This assumption is a strong one and needs to be validated with appropriate research in the field, although again, it may not dramatically alter the result.

There is a considerable amount of uncertainty around the cost of the licence per patient due to uncertainty in the throughput of people receiving CCBT. This is one of the main drivers of cost and is a major unknown. The licence costs also depend on the organisational level of purchasing, with PCT and higher organisational levels attracting lower costs per practice. For the PCT licence to result in a major cost reduction per patient each practice would have to use the package as efficiently as those practices who buy it for themselves under the practice licence option.

Finally, there are questions surrounding the clinical data, particularly for Cope and Overcoming Depression where there have not been any controlled trials.

[Commercial-in-confidence information has been removed.]

Conclusion

It is difficult to compare across product given there have been no head-to-head comparisons and the main clinical studies were undertaken on different populations. However, BtB achieves the lowest cost per QALY across the three products More importantly, the strength of BtB lies in the fact that it has been evaluated in the context of an RCT with a control group. For this reason there is less uncertainty around the results and this is reflected in a higher level of acceptance in the PSA compared with the other products (86.8% versus 62.2% and 54.4%). The subgroup analysis suggests that the cost-effectiveness of these products is not altered by the severity of depression (for mild to moderate, moderate to severe and severe).

[Commercial-in-confidence information has been removed.]

Panic phobia (FearFighter)

The question addressed by the model is what would be the likely impact of CCBT on the costs and effectiveness of treating patients with panic phobia in a primary care setting compared with clinician-led therapy and TAU.

Structure

This model draws heavily on the RCT by Marks, which compares FF to TCBT and relaxation.[88] TCBT is equivalent to standard clinician-led CBT of six hourly sessions. Relaxation involved around 1 hour of contact time with a trained behavioural therapist. Relaxation acts as a TAU arm and has been chosen because it was the control arm in the Marks trial.[88]

The model is a four-cycle discrete-state Markov model lasting for 12 months, and each cycle length is 3 months. It is a very simple model where patients are assumed to be either well or suffering from panic phobia. A schematic of the model is shown in *Figure 6*. At the first cycle patients start in the panic phobia state and either respond to treatment and move to the well state or stay in the panic phobia state. In the next cycle patients are assumed either to remit (stay in the well state) or to relapse back into the panic phobia state. In cycles 3 and 4, patients move between states depending on where they are; thus, patients in the well state can remit or relapse, and patients in the panic phobia state can respond to therapy and move to well or stay out.

Parameter inputs

Transition probabilities

Rates of response are taken from the Marks study[88] using the global phobia item from the FQ. A cut-off point of 4 was chosen, where it is assumed that those who score lower than 4 post-treatment are responders, while those who have a score equal to or higher than 4 are not responding (i.e. they stay in the same panic phobia state). This cut-off is justified on the grounds that it was an inclusion criterion for entering the Marks trial and

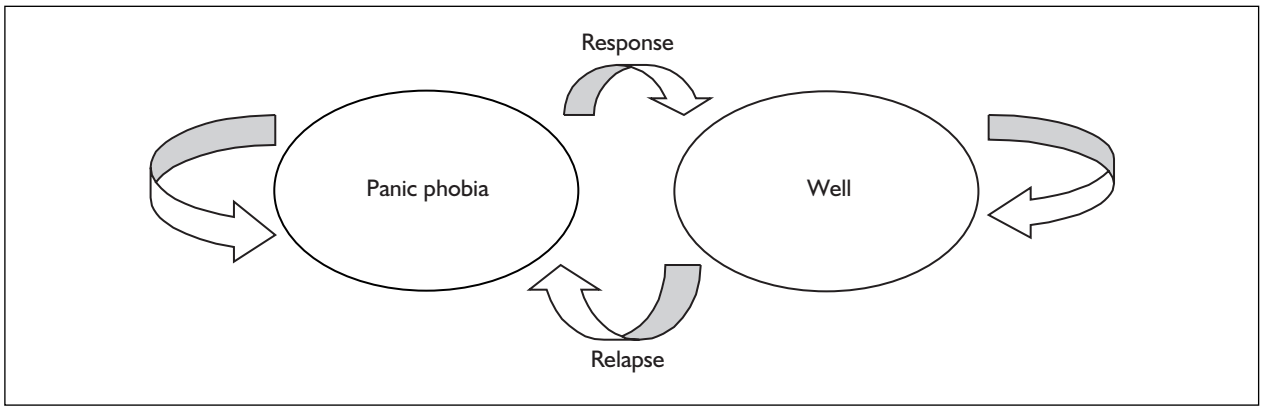

FIGURE 6 *Markov model for panic phobia*

one of its primary outcomes.[88] Moreover, the developers of the scale suggest that a score of 4 or more indicates a clinical disability.[134] The response rate used in the model was elicited by placing a normal distribution with mean and standard deviation equal to the post-treatment scores in the trial.

Relapse

There is a very limited literature on relapse rates in this patient group; what there is refers more to the natural history of disease than to relapse rates after CBT, and there is nothing on CCBT. This was taken from a study by Liebowitz that estimated the annual relapse rate in CCBT versus phenelzine in social phobia.[135] Relapse was described as the manifestation of panic attack after accomplishing full recovery. The annual rate estimated in this study was 17% and this has been converted to a 3-month rate of 0.045. It is also assumed in the model that the relapse rate is the same for CCBT and clinician-led therapy.

Cost data

CCBT

This product is made by the same manufacturers as Cope and is to be marketed at the same price as NetCope. The costs associated with the product in terms of licence fees, computer hardware, screening of patients for suitability, clinical support, capital overheads (for facilities for computer and clinician) and the training of staff are the same as for NetCope. The manufacturers argue there will be the same level of demand for FF as for Cope, and this has been assumed in the costing. However, the ONS survey suggests that the prevalence of panic phobia is somewhat lower than that of depression and so the average cost per patient may be underestimated.

In their submission the sponsors suggest a telephone support line and this has been costed in the economic model as for NetCope. However, the Marks trial[88] used a face-to-face meeting with a clinician averaging 76 minutes per patient. This second method of providing support would cost £29 compared with the cost of £35 from telephone helpline support and so makes little difference to the costs.

TCBT

There is considerable uncertainty around the likely cost of clinician-led therapy.[52] This stems from the variation in treatment length and the qualification of the therapist. Published costs vary from as low as £191 up to the figure in the NICE Depression Guidelines of £867. The figure used in this report was based on the Marks trial, but in practice the actual cost of TCBT may be different.

The cost of TCBT is based on a shortened course of CBT provided in the Marks trial[88] of six hour-long individual treatment sessions. The actual average amount of treatment received was 2.83 contact-hours per patient. It is assumed that the unused sessions are wasted and treatment is costed on the basis of 6 hours. The Marks trial used a combination of nurse and psychiatrists. In primary care it is unlikely to be provided by a clinician and so it has been costed for a clinical psychologist at £66 per hour,[136] giving a total cost of £396. The cost would be substantially less if a practice nurse provided the treatment.

Relaxation

This was a computer-guided programme of relaxation supported by brief face-to face help from a clinician of up to 5 minutes coaching and review before the session and up to 15 minutes

spent discussing progress and giving extra treatment advice at the end. In the trial patients received a total of 76 minutes of such clinical support. This is costed as 1 hour at £23 for a practice nurse.[136]

For the depression model, the other costs associated with the different levels of severity were estimated from the Proudfoot study.[87] There is no evidence on the impact of CBT, TCBT or relaxation on other health-service usage. In the model the only other cost is for patients who relapse or remain in an ill state, where it has been assumed that there will be an additional GP visit between cycles.

Quality of life data
The review of utilities data on phobia yielded just one possible source of evidence, namely the European Study of the Epidemiology of Mental Disorders (ESEMeD) survey.[137] The details of this are explained in Appendix 10, but essentially it was a large, community-based mental health survey across Europe, in which members of the general population underwent a range of psychiatric assessments and completed a series of quality of life instruments, including the EQ-5D and the Short Form 36 (SF-36).

Table 13 shows the quality of life attached to three phobic states and no disorder for the EQ-5D.[138] These data are not ideal for the economic model. The patients are not the same as those recruited into the Marks trial. The ESEMeD sample comprises people who were found to have these mental disorders over the past 12 months. It is a mixed group of patients, some of whom will be experiencing some degree of remission as well as those in the worst phases of the condition. It is unclear how these relate to the patients in the trial. Furthermore, it is not clear how much these specific disorders contributed to these quality of life scores. If these patients have been cured of their condition it is not clear that they would have been restored to the value for those with no disorder. Nonetheless, this sample is the best available evidence.

TABLE 13 *Health state values for patients with panic phobia: ESEMeD survey*[137]

Condition over past 12 months	EQ-5D		
	n	Mean	95% CI
Social phobia	218	0.79	(0.75 to 0.84)
Agoraphobia	86	0.79	(0.73 to 0.84)
Specific phobia	698	0.82	(0.80 to 0.85)
No disorder	2133	0.91	(0.97 to 0.98)

Discounting
There is no discounting because the model only runs for 12 months.

Analysis
The cost-effectiveness results are presented in terms of incremental cost per QALY of each product. The uncertainty around parameter inputs is presented in Appendix 12. To handle this uncertainty in the most efficient way a PSA was performed to investigate uncertainty around the key parameters. The probabilistic sensitivity analysis consists of 10,000 runs, where each of the random parameters is drawn from its own distribution to give the cost-effectiveness of each treatment. The PSA is intended to capture most of the uncertainty in the model; however, one variable that is not captured is the organisational level at which the NHS would purchase the product. This will be explored in univariate sensitivity analysis.

Results
Parameter values
The costs of FF are the same as for NetCope and are shown in Appendix 11. Two costings were done for practice-level licences, one assuming that the Internet can be accessed by patients either from home or at some other location that is cost free to the NHS, and the other assuming Internet access via the local practice, and one PCT-level costing. The estimated cost of these is £171.30 for the first practice-level option, increasing to £195.86 if the practice has to provide computer access. At the PCT level, the cost falls to £110.53. These estimates come with large ranges, reflecting the uncertainties around the unit costs and, more importantly, the uncertainties around the expected numbers of patients treated at practice level. If this disorder resulted in a lower throughput than depression, then the average costs would be higher than for NetCope.

The data used to populate the model, quality of life and costs used in the economic model are shown in Appendix 12.

Results
Relaxation is the least costly strategy, but also the least effective (*Table 14*). The results show that there is no clear dominance between interventions. In terms of their incremental cost-effectiveness, FF achieves a cost per QALY of

TABLE 14 *Cost-effectiveness of FF*

Strategy	Cost (£)	Incremental cost (£)	Effectiveness	Incremental effectiveness	ICER
Relaxation	78		0.736		
FF	217	138	0.794	0.058	2,380
TCBT	410	194	0.805	0.011	17,608

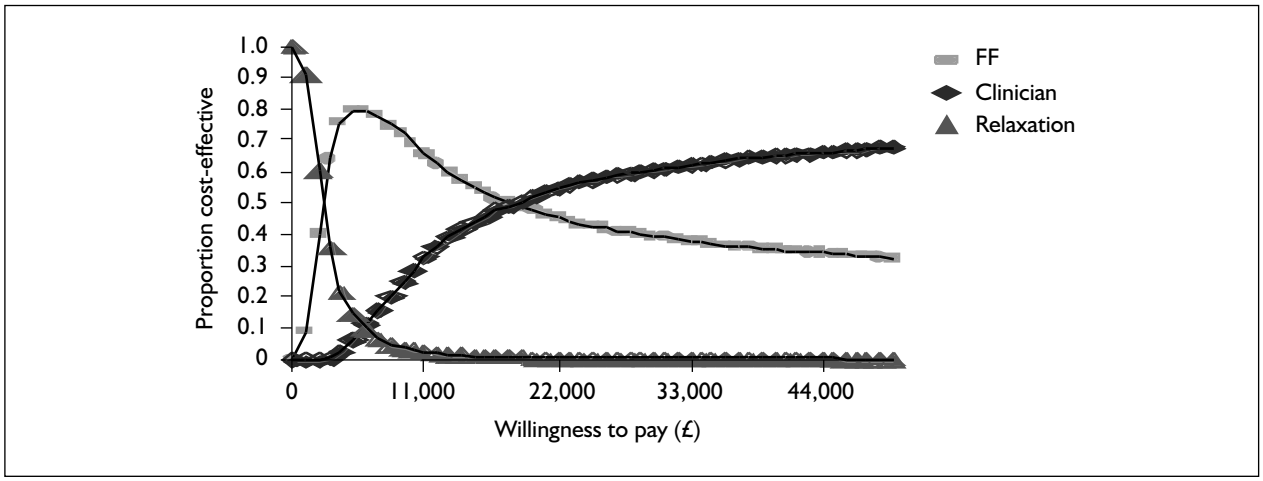

FIGURE 7 *CEAC for panic phobia*

£2380 over the largely ineffective relaxation. Using the self-reported global phobia item, clinician-led therapy is more effective than CCBT, although this was not statistically significant and is not a consistent finding across the outcome measures. However, using this figure results in an incremental cost per QALY of TCBT over FF of £17,608.

Figure 7 shows the CEAC calculated on 10,000 runs of the model. At £30,000 per QALY the rate of acceptance for FF is 39% and for TCBT 61%. At this point the curves are still diverging.

The main analysis was performed using a high cost of FF (cost at GP practice level). A sensitivity analysis using a lower cost estimate (cost at PCT level) results in the incremental cost-effectiveness of FF over relaxation being reduced to £901 and the incremental cost-effectiveness of TCBT over CCBT being increased to £25,432.

Discussion

Results from this model have to be interpreted with care. The economic model provided a means of extrapolating from the Marks trial[88] to a full year. To do this, the results on recovery from the trial were combined with the assumption that relapse is the same for CCBT and TCBT.

To construct the Markov model, data on symptoms from the Marks trial[88] were converted into a simple dichotomous cut-off to populate the Markov model and to link to health state utility values from a European-wide survey of these conditions. There is considerable uncertainty about these connections. The time framework for the model is only 12 months. The benefits may persist beyond 12 months, but it was felt untenable given the short follow-up in the trial.

Conclusion

CCBT seems to be cost-effective compared with doing nothing. However, it is more difficult to judge its effectiveness compared with TCBT. A shortened variant of CBT was found in the Marks study[88] to be marginally more effective than CCBT, although this was not a statistically significant finding and was not consistent across outcome measures. The extent to which this possible extra effectiveness is worth the extra cost depends on the relative costs of CCBT and CBT, and these too are uncertain. Currently, the evidence seems too weak to allow comment on the relative cost-effectiveness of the CCBT product compared with TCBT.

OCD (BT Steps)

The question addressed is: what would be the likely impact of BT Steps on the costs and effectiveness

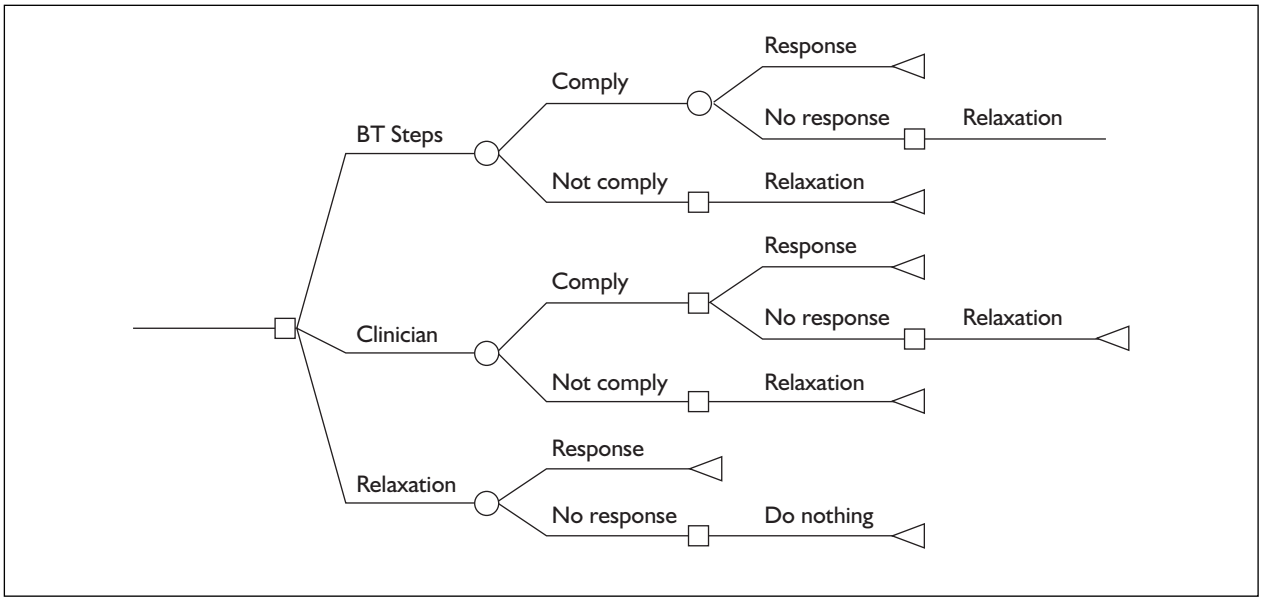

FIGURE 8 *Decision tree for OCD*

of treating these patients compared with the alternatives of clinician-based therapy and TAU?

Structure

This decision-tree model draws heavily on the Greist trial,[115] which has three arms: BT Steps, TCBT and relaxation. The variant of TCBT consists of clinician-guided therapy of 11 weekly 1-hour sessions to negotiate self-exposure homework. The relaxation therapy patients are asked to perform relaxation exercises on a daily basis for 10 weeks. The latter provides a TAU group for the model and is an arm in the Greist trial.[115] The decision-tree diagram is shown in *Figure 8*.

As with the depression model, it runs for 18 months with two main cycles. Patients start with a diagnosis of OCD (total score on the YBOCS of at least 16) and receive treatment with BT Steps, TCBT or relaxation. Patients receiving BT Steps either comply with treatment or do not. Those who comply may respond or not respond at the end of 2 months. Those who respond are assumed to enter a well state for 6 months. Those who fail to respond or fail to comply remain in the OCD state for 6 months and are then offered relaxation and experience the outcome associated with that therapy (see below). Those who initially respond to BT Steps may relapse back to having OCD after 6 months and these too will be offered relaxation in the next cycle. Those who have clinician-led therapy follow the same structure. Relaxation patients also follow a simplified version of this structure.

Parameter values

Compliance

The rate of non-compliance is assumed to be 30%. This is similar to the dropout rates in the clinical trials and submissions on CCBT, although the dropout rate is a loss for various reasons, one of which would be compliance. People who drop out from CCBT receive TAU straight away. This compliance rate is applied to all arms of the study.

Response rate data

YBOCS data from the Greist trial[115] were used to define responders and non-responders. Patients recruited into this trial had to have a YBOCS score of 16 or more (*Table 15*). The resultant mean pretreatment score was around 25, and this was used to define non-responders after treatment. A responder is defined as someone experiencing a 35% improvement in YBOCS with respect to his or her original score.[139] This is a little more stringent than the 25% improvement commonly used in the literature, but results in a mean score of 16 post-treatment that represents the cut-off value for the trial. A normal distribution was centred on the YBOCS mean score and standard deviation post-treatment. The proportions of those who score less than the cut-off point define the proportion of improved patients, as shown in *Table 16*.

Quality of life

The review of OCD found little evidence on the health state utility values of people with OCD (Appendix 10). The only study to have any data

TABLE 15 *Responders using the YBOCS*

	Baseline mean (SD)	End-point	35% reduction	Cut-off point for responder	Responders below cut-off (%)
BT Steps	24.6 (4.3)	19.0 (7.2)	8.61	15.99	33
Clinician	25.2 (4.6)	17.6 (6.2)	8.82	16.38	42
Relaxation	25.8 (5.1)	24.1 (6.7)	9.03	16.77	13

on this was the ESEMeD European community-based psychiatric survey, which included a diagnosis of OCD in the past 12 months. The mean EQ-5D health state utility value of people diagnosed with OCD was 0.85, compared with 0.91 for those without disorder. However, it was felt that a better approach would be to use the YBOCS, since this would enable a more direct linkage to the Greist trial.[115]

The YBOCS is a self-rated questionnaire that asks people about their obsessive and compulsive symptoms. It generates scores for these two domains and a total score based on a simple summation of these scores. The ESEMeD undertook a mapping exercise for use between the YBOCS and the EQ-5D and found that a 1-point reduction in the obsessive scale was equivalent to a 0.03 reduction in the EQ-5D preference scale (p=0.0006). This algorithm was applied to the Greist data to convert those who responded into EQ-5D scores.

YBOCS values for non-responders are assumed to be 25 (i.e. the mean pretreatment score) and responders to be equivalent to a post-treatment score of 16. These scores were converted into EQ-5D scores by applying the mapping function from the obsessive scale to the 0.04 decrement per point change in the score. The change in the obsessive score was estimated to be half of the overall change in YBOC score. The EQ-5D values estimated in this way are 0.92 (0.07) for responders and 0.80 (0.15) for non-responders.

Cost data

CCBT

The same manufacturer as Cope makes this product and it is to be marketed at the same price as NetCope. The costs associated with the product in terms of licence fees, computer hardware, screening of patients for suitability, clinical support, capital overheads (for facilities for computer and clinician) and the training of staff are the same as for NetCope. The only difference is the fact that the number of patients with OCD is significantly lower. The sponsor used a prevalence figure of 2% rather than 10%. This results in the following reduction in throughputs: a one to five GP practice goes from 20 to 7.5 (range 5–10), a six to ten GP practice from 40 to 12 (8–16) and a PCT from 400 to 247.5 (165–330). All other costs are assumed to be as for Cope. The lower throughput of BT Steps compared with Cope results in a lower level of helpline support required per copy; otherwise, the total costs are the same as for Cope. This results in costs per treated patient that are substantially higher than the other CCBT products.

TCBT and relaxation

The exact amount of clinician-led therapy likely to be provided on the NHS is unclear, so this analysis used the figure given in the Greist trial of 11 hourly sessions. At £66 pounds per hour for a clinical psychologist[136] this equates to a cost of £726. The course of relaxation is assumed to be the same as for FF of approximately 1 hour at a cost of £23.

For the depression model, the other costs associated with the different levels of severity were estimated from the Proudfoot study. There is no evidence on the impact of CBT, TCBT or relaxation on other health-service usage. In the model, it is assumed that the patient will visit their GP in search of alternative treatment when they fail to comply, and this is costed at £26 per visit.[136]

Discounting

Costs and outcomes (QALYs) were discounted at the recommended Treasury rate of 3.5% and a sensitivity analysis was performed using the old Department of Health rates of 1.5% for QALYs and 6% for costs.

Results

Parameter values

The cost structure for BT Steps is the same as for FF and NetCope, with the only difference being the substantially lower levels of throughput. Two costings were done for practice-level licences, one assuming that the Internet could be accessed directly by patients and the other from general practice, and one PCT-level costing. The estimated cost per patient is £714.49 for the first practice-

TABLE 16 *Cost-effectiveness of BT Steps and TCBT*

Strategy	Cost (£)	Incremental cost (£)	Effectiveness	Incremental effectiveness	ICER
Relaxation	45		1.202		
TCBT	518	474	1.228	0.026	18342
BT Steps	878	360	1.218	–0.010	Dominated

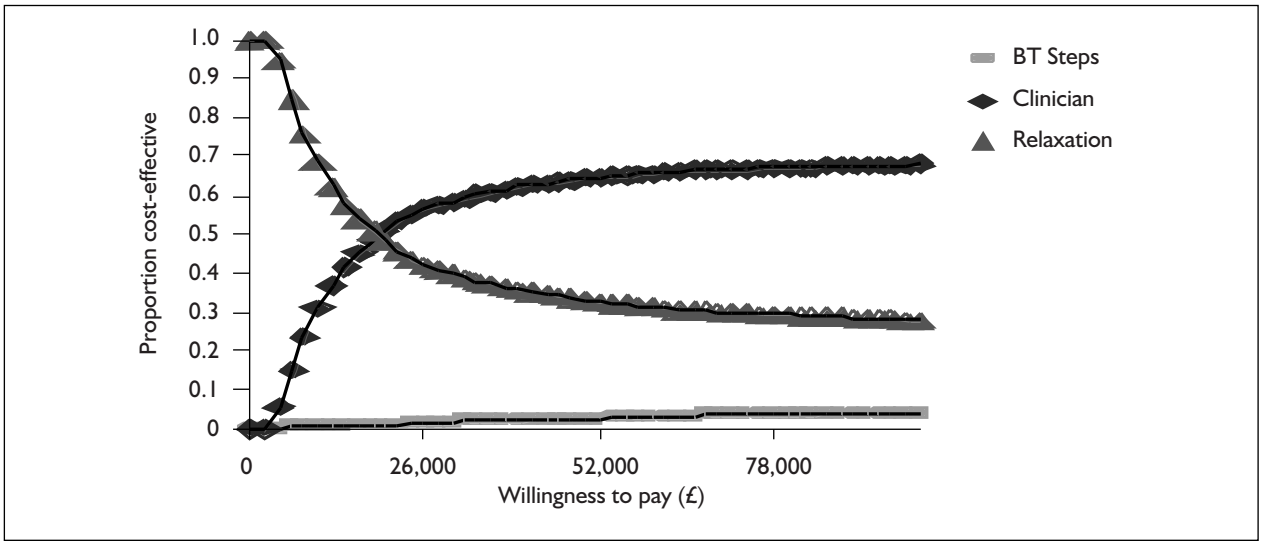

FIGURE 9 *CEAC for BT Steps*

TABLE 17 *Sensitivity analysis on OCD (low cost of BT Steps)*

Strategy	Cost (£)	Incremental cost (£)	Effectiveness	Incremental effectiveness	ICER
Relaxation	45		1.202		
BT Steps	286	241	1.218	0.015	15,581
TCBT (clinician led)	518	232	1.228	0.010	22,484

level option and £837.23 if the practice has to provide computer access. At PCT level, the cost per patient falls dramatically to £248.83. These estimates come with large ranges, reflecting the uncertainties around the unit costs and, more importantly, the uncertainties around the expected numbers of patients treated at practice level.

TCBT has a cost per QALY of £18,342 over relaxation (*Table 16*). The incremental costs per QALY show that clinician-led TCBT dominates BT Steps. At £30,000 per QALY, TCBT is cost-effective on 58% of occasions (*Figure 9*).

Applying discount rates of 6% to costs and 1.5% to QALYs has little impact on the cost per QALY. A sensitivity analysis was undertaken using the lower estimate of BT Steps from purchasing at PCT level. The results are shown in *Table 17*. At the lower cost per patient, there is no dominated strategy. The cost per QALY of BT Steps over relaxation is £15,581 (*Table 17*). Assuming a cost of £66 per session for TCBT, then it costs more for a slightly larger effect, with a mean incremental cost per QALY of £22,484.

Discussion

There are considerable limitations to the model used to examine the cost-effectiveness of BT Steps. The health state utility values were based on a very indirect method and there is considerable uncertainty in the values used. The cost per patient of BT Steps is considerably higher than that of the other CCBT products. The relative cost

of BT Steps depends crucially on the licence, with a practice licence leading to BT Steps costing more than TCBT. A PCT licence brings the cost to below that of BT Steps, but TCBT could be offered at lower cost if practice nurses provided most of the therapy. The sponsor may decide to change its tariff for BT Steps in the light of this analysis.

Conclusion

There is considerable uncertainty around the cost-effectiveness of BT Steps. While it achieves a lower cost per QALY against relaxation, compared with TCBT there is too much uncertainty to draw firm conclusions. TCBT was found to be more effective and seems to cost less than BT Steps for a practice licence, but it may cost more with a PCT licence.

Cost impact

The cost impact was estimated using the models developed for assessing cost-effectiveness, rather than directly from the licence fee schedules provided by the sponsors. This is because the impact of CCBT on costs is far wider than the licence fee. The provision of CCBT also results in cost consequences from computer hardware, screening of patients for suitability, clinical support, capital overheads (for facilities for computer and clinician) and the training of staff. CCBT also has an impact on costs via changes to the severity level of each condition. The consequences of changing severity group have been estimated for depression, but it was not possible to do this for the other conditions. For depression the incremental cost over TAU allows for possible reductions in the use of existing services. For panic phobia and OCD, the costing assumes that the CCBT is additional to existing services. Costing methods have been described briefly earlier in this chapter and are detailed in Appendix 11.

BtB and Overcoming Depression have a licence fee tariff for single copies for purchase at the level of general practice. Cope, FF and BT Steps also offer licences at different organisational levels: PCT, strategic health authority, NHD PASA consortium and country (England, Wales and Scotland). For the cost-effectiveness analysis, it was decided to limit the costings to the level of general practice and PCT, since it seems unlikely that the NHS would purchase these products above this level. For this costing, the authors propose to do the same.

TABLE 18 *Cost impact in England*

CCBT product	Practice licence (£)	PCT licence (£)
BtB	32,181,975	5,151,000
Cope	42,252,525	16,059,000
Overcoming Depression	14,011,200	8,635,500
FF	45,317,475	11,817,000
BT Steps	23,643,900	18,073,193

TABLE 19 *Cost impact in Wales*

CCBT product	Practice licence (£)	PCT Licence (£)
BtB	1,866,900	238,000
Cope	2,451,100	742,000
Overcoming Depression	812,800	399,000
FF	2,628,900	546,000
BT Steps	1,371,600	835,065

Tables 18 and *19* present the estimated cost impact of the different CCBT products in England and Wales for practice and PCT licences. These cost estimates are based on the assumption that all practices and PCTs will purchase a licence. The costs differ between products owing to differences in cost of the licence (Overcoming Depression has the lowest cost licence), effectiveness (with consequence impact on severity) and throughput (BT Steps, for example, treats fewer patients and so incurs fewer non-licence fee costs).

The costs presented in *Tables 19* and *20* differ considerably from the fee for a national licence for Cope, FF and BT Steps provided in the sponsors submissions of £4,900,000 for England and £280,000 for Wales. The reason for the discrepancy is not just the differences in the licence fees, but also the fact that the models included other cost consequences of the interventions. However, presenting the national cost impact raises a question about the possibility of national licence agreements. The cost-effectiveness assessment did not look at this option, but it may be possible to negotiate discounts for the NHS and this could substantially alter the total costs, although the impact on cost-effectiveness will depend on throughput levels. The sponsor submissions assume a constant throughput across licences, but it is likely that many practices will not use the service as efficiently as those that purchase a practice licence.

Chapter 5

Factors relevant to the NHS

The NSF for Mental Health[1] states that patients who contact their primary healthcare team with a common mental health problem should have their mental health needs identified and assessed and be offered effective treatment. CBT has been identified by the NSF as being effective in the treatment of depression. Currently, the NHS is unable to deliver CBT to all patients who may benefit from it. Long waiting lists, too few therapists, expense and patients' reluctance to enter therapy are some of the barriers preventing many patients with depression, anxiety, phobias and OCD from accessing services providing CBT.

As in the previous review, the evidence for CCBT is limited, although potentially promising for the treatment of depression, anxiety, phobias and panic. The implementation of a CCBT package within the NHS requires careful consideration of a number of issues. Computers need to be made available either in a public place or in a patient's home. Internet access of a suitable capacity would be required for those packages delivered via the Internet. A designated person, such as a GP, nurse or therapist, would need to be responsible for implementing CCBT and their training needs would need to be met. Money would also be required for the licence fee. The appropriate method and length of screening to determine suitability of patients for CCBT also need to be taken into consideration.

Computer use would not be acceptable to all patients and alternatives would need to be offered. Options include bibliotherapy, group CBT and shortened courses of CBT. Other treatment options need to be made available for those who do not want to use CCBT or who try it and find it unacceptable. This is particularly important for elderly people, a group frequently presenting with symptoms of depression, but for whom computer usage may be unacceptable.

Although the use of CCBT could potentially allow CBT to be made available to more patients, patients would need careful monitoring. This is particularly true for patients with depression where there is a suicide risk. CCBT packages could potentially fit within a stepped care approach to the treatment of these mental disorders. Formal assessment of patients is required to determine whether or not patients are suitable and they need careful monitoring throughout treatment.

Those CCBT packages available only over the Internet are potentially useful within the NHS and can provide a complementary treatment component to usual care with a GP, who would be able to monitor progress at regular intervals and offer alternatives when patients do not improve with this approach.

Chapter 6
Discussion

Main results

Clinical effectiveness

Twenty studies (two of which were AIC) were identified in the clinical effectiveness review. Ten of these studies were of the included software packages and ten were of other studies. The results from the RCT for BtB suggest that BtB is more effective than TAU. The data provided for Cope include no RCT evidence. In the two non-comparative trials provided, patients improved from baseline. Likewise, the data provided for Overcoming Depression included no RCT evidence, although patients improved from baseline. FF appears to be as effective as TCBT. BT Steps was not as effective as TCBT, although patients improved from baseline.

[Commercial-in-confidence information has been removed.]

With regard to the other ten studies, all apart from one (a pseudorandomised trial) were RCTs. Six involved studies of CCBT delivered via the Internet. Three studies of a program for panic found CCBT and TCBT to be effective, but TCBT more so, and more effective than WLC, but found that relaxation was more effective than CCBT. Two other Internet-based programs for depression (ODIN and MoodGym) showed MoodGym to be effective. ODIN was found to be ineffective in one study. Balance, another software program for depression, was found to be effective on some measures compared with WLC. Finally, three studies of CAVE, used to treat spider phobia, found CAVE to be effective, as well as TCBT and relaxation.

[Commercial-in-confidence information has been removed.]

Cost-effectiveness

Review

The review of published studies identified one economic evaluation of CCBT and was included in the submission from Ultrasis for BtB. It was a cost-effectiveness analysis undertaken alongside a randomised clinical trial of BtB compared with TAU. It was well conducted and had good internal validity. The main weaknesses were: (1) the assumed cost of intervention was based on unrealistically high expectations regarding the likely numbers using the package at GP practice level; (2) the derivation of QALYs was based on symptom-free days and so did not take into account all potential benefit, and used non-reference case health state values; and (3) the trial was limited to 8 months and the benefits of BtB may extend beyond this period. The assessment of BtB and the other packages for depression was based on an economic model that addressed these problems.

Sponsors of the other packages submitted information only on the costs of their products (and this was used in the economic model).

Depression

The three products share the same basic model structure of a decision-tree model comparing two arms, CCBT and TAU, over an 18-month period. TAU is difficult to specify, so this model used the treatment received in the Proudfoot trial[87] as representing TAU in the NHS. TAU patients in this trial continued to visit their GP, receive medication and be referred to a specialist, although they were not receiving psychotherapy at the time of entering the trial. TAU is assumed to be the same across all three products. For practice-based licences, the overall intervention costs were £219.30 for BtB, £195.86 for Cope with practice-provided Internet access and £170.30 without, and £72.64 for Overcoming Depression. For PCT-based licences the costs fell to £104.62, £110.53 and £66.64, respectively.

The BtB model was able directly to use the results of the RCT and simply extend the benefits by another 10 months by making assumptions about relapse rates taken from the literature on CBT. The primary end-point of the trial, BDI, was mapped onto the EQ-5D to derive cost per QALY. The costs of the intervention were estimated using more realistic assumptions about likely throughput than the submission. A key assumption was that the TAU arm of the BtB trial was appropriate for these products.

The results in terms of incremental cost per QALY compared with TAU and the likelihood of being

cost-effective at £30,000 per QALY were £1801 and 86.8% for BtB, £7139 and £62.6% for Cope, and £5391 and 54.4% for Overcoming Depression. It is difficult to compare across product given that there have been no head-to-head comparisons and the main clinical studies were undertaken on different populations. However, the strength of BtB lies in the fact that it has been evaluated in the context of an RCT with a control group. For this reason there is less uncertainty around the cost-effectiveness of BtB. The subgroup analysis found no difference across the severity groupings.

[Commercial-in-confidence information has been removed.]

Phobia/panic

FF was compared with TCBT and relaxation. TCBT is equivalent to standard therapist-led CBT and was designed to consist of six hourly sessions. Relaxation involved around 1 hour of contact time with a trained behavioural therapist. Relaxation acts as a TAU aim and was chosen because it was the control arm in the main trial of this product.[88]

The economic model is a four-cycle discrete-state Markov model lasting for 12 months, and each cycle length is 3 months. Patients are assumed to be either well or suffering from panic phobia. In the first cycle patients start in the panic phobia state and either respond to treatment to move to the well state or stay in panic phobia state. In the next cycle patients are assumed either to remit (stay in the well state) or to relapse back into the panic phobia state. In cycles 3 and 4, patients move between states depending on where they are; thus, patients in the well state can remit or relapse, and patients in the panic phobia state can respond to therapy and move to well or stay the same. A global phobia item in the trial was used to estimate transition probabilities and this was linked to EQ-5D health state values from a separate survey.

The overall intervention cost of FF was £195.86 with practice Internet access and £171.30 without, and £110.53 for a PCT licence. The incremental cost per QALY of FF over relaxation was £2380. Its position compared with TCBT is less clear. Although the Marks trial[88] found TCBT to be more effective than FF, this difference was neither significant nor consistent across outcome measures. Assuming that this is a significant difference, the incremental cost per QALY of TCBT over FF was £17,608, but the probability of being cost-effective at £30,000 per QALY is just 61%.

OCD

Cost-effectiveness was assessed using a decision-tree model with three arms: BT Steps, clinician-guided therapy and relaxation. TCBT consisted of 11 weekly 1-hour sessions to negotiate self-exposure homework. Relaxation therapy patients were asked to perform relaxation exercises on a daily basis for 10 weeks. This provides a TAU group for the model. These were the three arms in the Greist trial[115] and these were included in the economic model. The model uses a simple dichotomy: with OCD or well. The rate of response to therapy and the quality of life associated with these states were estimated from a condition-specific measure called the YBOCS.

The intervention cost of BT Steps per patient was estimated to be £837.23 for a practice-based licence and practice access to the Internet and £719.49 with no access to the Internet in general practice. A PCT licence is much cheaper, at £248.83, assuming that it can achieve the same levels of throughput per practice. Using the practice-level licence cost means that BT Steps is dominated by TCBT, which had significantly better outcomes in the Greist trial[115] and is cheaper. However, the cheaper PCT licence results in BT Steps costing less than the more effective TCBT. At the lower cost the incremental cost-effectiveness of BT Steps over relaxation is £15,581 and that of TCBT over BT Steps is £22,484.

Assumptions, limitations and uncertainties

Clinical effectiveness

Little information was identified on the optimal setting, and type of patient with regard to age, gender, ethnicity and socio-economic background. In most studies, recruitment was through self-referral. This does not reflect usual practice in GP settings. There were large dropout rates in most studies; it is unclear whether this is because patients got better and felt that they did not need treatment or because they felt that they were not improving.

Little information was provided in the studies regarding patient preference. Patients may still prefer TCBT or bibliotherapy and these issues need to be considered before there is a large commitment made to the provision of CCBT throughout the NHS. NICE issued guidance on the use of CCBT for anxiety and depression in October 2002.[80] The following recommendations for research were identified.

- Clinical efficacy but not clinical effectiveness for BtB and FF has been established. Further investigation into the clinical efficacy of other CCBT packages needs to be conducted. An RCT was identified comparing BT Steps with TCBT. Apart from these two studies no new RCT evidence of the included packages was identified comparing CCBT with TCBT or TAU.
- Optimum site of delivery needs to be established; that is, primary or secondary care, dedicated centres or via the Internet. No RCT evidence of the included packages was identified comparing CCBT in different settings.
- Criteria should be developed that allow identification of the optimum CBT package (including CCBT) for individual patients. No studies were identified comparing CCBT packages.
- Research is needed to identify individuals most suited to CCBT in preference to other methods of delivery of CBT. No research was identified regarding preference, apart from some studies indicating that patients showed some preference for TCBT.
- Processes for appropriate screening and referral for CCBT need to be established and implemented. No independent studies were identified investigating appropriate screening and referral procedures.
- The role and place of CCBT within stepped care need to be established and the use of CCBT in conjunction with TCBT should be evaluated more fully. No studies of CCBT within a stepped care framework were identified.
- The level of facilitator involvement needed to produce optimal outcomes for CCBT should be evaluated. No studies were identified that investigated the level of facilitator involvement.
- Research is needed to compare the cost-effectiveness of CBT via a computerised interface with TCBT and usual GP care and with a combination of these approaches. Evidence on this point is presented in Chapter 4 of this report.

Research is still needed in these areas. As in the last review, assumptions have been made in evaluating these studies that the investigators have been objective in assessing the programmes that they are using. However, investigator allegiance can introduce strong bias in studies of psychological treatments.[140] Many of the results presented in this report are from unpublished trials and have therefore not been peer reviewed. Undertaking research in a primary care setting is associated with a number of difficulties, as shown in a recent study attempting to randomise patients to BtB, TCBT or TAU.[141]

Cost-effectiveness

Depression

The main limitations of the cost-effectiveness estimates lie in the assumptions of the model. The key assumptions are around compliance, rate of relapse, clinical effectiveness and throughput.

It was assumed that the probability of non-compliance is 30%. CCBT is still a new intervention and there is little evidence on the likely levels of compliance. It was assumed that the relapse rate for CCBT is the same as for traditional CBT. This assumption is a strong one and needs to be validated with appropriate research in the field.

There is a large amount of uncertainty in the cost of the licence per patient owing to uncertainty in the throughput of people receiving CCBT. The model used more realistic throughput levels, but there is little evidence on the likely take-up in practice. The licence costs also depend on the organisational level of purchasing, with PCT and higher organisational levels attracting lower costs per practice. However, the lower costs per patient assume that the PCT (or strategic health authority or the NHS) is able to make sure that each practice uses the packages as efficiently as a practice purchasing its own copy; but in practice, for example, some practices may be less efficient at selecting cases.

It has been suggested that CCBT might be used in a stepped care programme, where patients are offered interventions of increasing intensity and costs depending on the severity of their condition and recovery. The present models did not look at this option because there is no evidence on the likely effectiveness of such a programme. A stepped intervention is not simply the sum of its constituents, because the effectiveness of each intervention will depend on what went before. This is an important area for research.

Phobia/panic

The economic model provided a means of extrapolating from the Marks trial[88] to a full year. The rate of relapse following CCBT was assumed to be the same as for TCBT. To construct the Markov model, data on symptoms from the Marks trial were converted into a simple dichotomous cut-off to populate the Markov model and to link to health state utility values from a European-wide survey of

these conditions. There is considerable uncertainty about these connections, but the model makes the best use of available evidence. The time framework for the model is only 12 months. The benefits may persist beyond 12 months, but this was felt untenable given the short follow-up in the trial.

While FF seems to be cost-effective compared with relaxation, its position compared with TCBT is less clear owing to the uncertainties. The Marks trial[88] has small numbers and this makes it difficult to interpret the difference found between CCBT and TCBT. Furthermore, there is considerable uncertainty surrounding the cost of CCBT and TCBT. It is difficult to draw any firm conclusions about the cost-effectiveness of FF compared with CBT.

OCD

There are considerable limitations to the model used to examine the cost-effectiveness of BT Steps. No consideration is given to relapse rates, as the literature contains little data on them. The health state utility values were based on a very indirect method and there is considerable uncertainty in the values used. The response rate came from a trial which again suffers from small numbers.

The cost per patient of BT Steps is significantly higher than for the more effective TCBT. The cost-effectiveness of BT Steps depends on the organisational level at which the NHS buys a licence. A PCT licence would substantially reduce costs and make it less attractive, although the final position also depends on the cost of TCBT.

Need for further research

Several key research needs were identified in this review. These remain the same as in the previous review.

The priority areas for research include the following.

- The position of CCBT within a stepped care programme needs to be identified as well as its relationship to other efforts to increase access to CBT and psychological therapies.
- Research is needed to compare CCBT with other therapies that reduce therapist time, in particular bibliotherapy.
- Further research is also needed to explore the use of CCBT via the Internet.
- Research needs to be carried out by independent researchers. It should be carried out by those who are not associated with commercial or product gains.
- Studies of CCBT should be RCTs and need to include an ITT analysis to take into account patients who drop out of trials. The reasons for withdrawal from trials need to be identified, as they relate directly to patient preference.
- Patient preference should be addressed in trial design. Two possibilities are the inclusion of qualitative research methods and the use of patient preference trials.
- Research is needed to determine the level of therapist involvement needed when using CCBT programmes to produce optimal outcomes.
- Studies need to be undertaken within the GP setting, as this is where most patients with anxiety, depression and phobias are treated.
- Efforts should be made to include patients with co-morbidities routinely treated within primary care.

Other important issues requiring further research include the following.

- The type of patient most likely to benefit from CCBT needs to be identified, particularly with regard to condition and severity of condition.
- Patients from a variety of ethnic and socio-economic backgrounds must be included in studies, and attention should be paid to age and gender.
- Co-morbidity and medication must be taken into account
- Other variables such as chronicity, previous treatment, social adjustment, interpersonal difficulties and social circumstances also need to be considered.
- Further research is needed to determine how patients with agoraphobia and social phobia, who do not currently access services because they are housebound, may benefit from CCBT.

Study design issues include the following.

- Study design should minimise researcher allegiance effects.
- If possible, patients who drop out of trials should be asked to complete outcome measures and reasons for withdrawal from trials should be clearly stated.
- Studies must be designed with adequate statistical power, taking into account the sample sizes needed to determine equivalent and superior effectiveness.
- Studies should use appropriate, well-validated outcome measures.

- Studies comparing CCBT with TAU need to be designed so that TAU is indeed that and not minimal intervention, to maximise the benefits associated with CCBT.

Components of CCBT warranting further research include:

- incorporation of CBT material
- readability and legibility of material
- length and frequency of sessions
- amount of homework
- the most appropriate software and computer interface
- comparison of individual CCBT packages to determine whether one may be more effective than others; CCBT packages need to be fully described and categorised to facilitate comparison
- amount of therapist time required for CCBT packages to be effective
- use of individual rooms for each patient compared with multiple user rooms.

Research recommendations for cost-effectiveness include:

- larger trials in a variety of settings: it is recommended that the trials have sufficient numbers to provide enough power for estimating important differences in both cost and effectiveness
- a pragmatic RCT of CCBT in a stepped care programme with economic data
- primary data to be collected using generic preference-based measures in people with depression and anxiety, panic phobias and OCD, and consideration given to preference-based condition-specific measures to provide a better basis for estimating QALYs for interventions in this area.

Chapter 7
Conclusions

There is evidence to support the effectiveness of BtB and FF. There is limited evidence of poorer quality that Cope and Overcoming Depression are effective. There is no RCT evidence to support the effectiveness of BT Steps.

- There is some evidence that CCBT is as effective as TCBT for the treatment of depression/anxiety and phobia/panic.
- There is some evidence that CCBT is more effective than TAU in the treatment of depression/anxiety.
- In studies reporting accurate estimates of therapist time, CCBT appears to reduce therapist time compared with TCBT and is therefore of use where access to TCBT is limited.

Cost-effectiveness

Reviews

There was only one published economic evaluation of CCBT, which was an economic evaluation of BtB alongside an RCT. It concluded that BtB was cost-effective against TAU in terms of cost per QALY (less than £2000). It had a number of weaknesses that were addressed in the model. The other submissions contained some cost data, but no other cost-effectiveness studies.

Modelling

The results in terms of incremental cost per QALY compared with TAU and the likelihood of being cost-effective at £30,000 per QALY were £1801 and 86.8% for BtB, £7139 and 62.6% for Cope, and £5391 and 54.4% for Overcoming Depression. The strength of BtB lies in the fact that it has been evaluated in the context of an RCT with a control group. The subgroup analysis found no difference across the severity groupings.

[Commercial-in-confidence information has been removed.]

The incremental cost per QALY of FF over relaxation was £2380. Its position compared with TCBT is less clear.

The position of BT Steps is even more equivocal because there is more uncertainty surrounding the likely cost of the licence. Midpoint estimates suggest that BT Steps will be dominated by TCBT, but allowing for a lower cost PCT licence results in the incremental cost-effectiveness of BT Steps over relaxation being £15,581 and TCBT over BT Steps being £22,484.

These conclusions are subject to substantial uncertainties around the organisational level for purchasing these products and the likely throughput. This is in addition to concerns with the quality of evidence on response to therapy, longer term outcomes and quality of life.

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The contents of the report remain the responsibility of the authors.

Contribution of authors

Catherine Beverley (Systematic Reviews Information Officer) undertook the electronic literature searches. Eva Kaltenthaler (Managing Director, ScHARR-TAG), Mike Ferriter (Research Fellow) and Gill Rooney (Project Administrator) carried out the review of clinical effectiveness for anxiety, depression and phobias. Indra Tumur (Research Fellow) carried out the clinical effectiveness review for OCD. John Brazier (Professor of Health Economics) and Enrico de Nigris (Research Assistant) carried out the economic analysis. Paul Sutcliffe (Research Associate) updated the background chapter. Glenys Parry (Professor of Applied Psychological Therapies) provided specialist advice.

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Appendix 1

Electronic bibliographic databases searched

1. Biological Abstracts
2. CINAHL
3. Cochrane Central Database of Controlled Trials (CENTRAL)
4. Cochrane Database of Systematic Reviews (CDSR)
5. EMBASE
6. Health Management Information Consortium (HMIC)
7. MEDLINE
8. MEDLINE Plus
9. NHS Database of Abstracts of Reviews of Effectiveness (DARE)
10. NHS Economic Evaluations Database (NHS EED)
11. NHS Health Technology Assessment (HTA) Database
12. Office of Health Economics Health Economic Evaluations Database (OHE HEED)
13. PsycINFO
14. Science Citation Index
15. Social Sciences Citation Index

Appendix 2

Other sources consulted

1. Agency for Healthcare Research and Quality (AHRQ)
2. Aggressive Research Intelligence Facility (ARIF)
3. British Association for Behavioural and Cognitive Psychotherapists (BABCP)
4. Bandolier
5. British Psychological Society (BPS)
6. Canadian Co-ordinating Centre for Health Technology Assessment (CCOHTA)
7. Centre for Health Economics, University of York
8. Computers in Mental Health
9. Current Controlled Trials (CCT)
10. Department of Health
11. Google
12. Health Evidence Bulletins, Wales
13. International Network of Agencies for Health Technology Assessment (INAHTA) Clearinghouse
14. Index to Theses
15. Medical Research Council (MRC) Funded Projects Database
16. National Assembly for Wales (NAfW)
17. National Guideline Clearinghouse (NGC)
18. National Research Register (NRR)
19. National Co-ordinating Centre for Health Technology Assessment (NCCHTA)
20. Organising Medical Networked Information (OMNI)
21. Research Findings Register (ReFeR)
22. Royal College of Psychiatrists
23. ScHARR Library Catalogue
24. Scottish InterCollegiate Guideline Network (SIGN)
25. Trent Working Group on Acute Purchasing
26. Turning Research into Practice (TRIP) Database
27. Wessex Development and Evaluation Committee (DEC) Reports
28. West Midlands Development and Evaluation Services (DES) Reports
29. World Health Organisation (WHO)

Appendix 3

Search strategies used in the major electronic bibliographic databases

CDSR and CENTRAL

Ovid, 2004 Issue 1
Search undertaken March 2004

1 depression
2 exp anxiety/
3 exp anxiety disorders/
4 (depression or depressive for depressed).tw
5 (anxiet$ or anxious).tw
6 panic$.tw
7 agoraphobi$.tw
8 phobi$.tw
9 obsessive compulsive disorder/
10 (obsess$ and (personalit$ or compuls$)).tw
11 or/1-10
12 exp psychotherapy/
13 (cognitive adj2 therap$).tw
14 ((behaviour$ or behavior$) adj2 therap$).tw
15 or/12-14
16 11 and 15
17 exp medical informatics computing/
18 multimedia/
19 computer-assisted instruction/
20 exp decision-making, computer-assisted/
21 computer$.tw
22 Internet.tw
23 interactive voice response.tw
24 therapy, computer-assisted/
25 or/17-24
26 16 and 25
27 "beating the blues".tw
28 "overcoming depression".tw
29 "restoring the balance".tw
30 fearfighter.tw
31 or/27-30
32 26 or 31

CINAHL

Ovid, 1982–2004
Search undertaken March 2004

1 exp depression/
2 exp anxiety disorders/
3 exp anxiety/
4 (depression or depressed or depressive).tw
5 (anxiet$ or anxious).tw
6 panic$.tw
7 agoraphobi$.tw
8 phobi$.tw
9 (obsess$ and (personalit$ or compuls$)).tw
10 or/1-9
11 exp psychotherapy/
12 ((cognitive or behaviour$ or behavior$) adj2 therap$).tw
13 or/11-12
14 10 and 13
15 exp "computers and computerization"/
16 exp information systems/
17 exp information technology/
18 multimedia/
19 computer assisted instruction/
20 comput$.ti
21 interactive voice response.tw
22 internet.tw
23 exp decision making, computer assisted/
24 exp telecommunications/
25 (telephone$ or phone$).ti
26 or/15-25
27 14 and 26
28 "beating the blues".tw
29 "overcoming depression".tw
30 "restoring the balance".tw
31 "fearfighter".tw
32 or/28-32
33 27 or 32

CRD databases (NHS DARE, EED, HTA)

CRD website: complete databases
Search undertaken March 2004

depress or anxiety or anxious or panic or agoraphobi or phobi or obsessive or compulsive/ all fields AND psychotherapy or cognitive or behavior or behaviour/ all fields

EMBASE

SilverPlatter WebSPIRS, 1980–2004
Search undertaken March 2004

#1 'depression-' / all subheadings
#2 'anxiety-' / all subheadings
#3 explode 'anxiety-neurosis' / all subheadings
#4 explode 'phobia-' / all subheadings
#5 (depression or depressed or depressive) in ti, ab
#6 (anxiet* or anxious) in ti, ab
#7 panic* in ti, ab
#8 phobi* in ti, ab
#9 agoraphobi* in ti, ab
#10 (obsess* and (personalit* or compuls*)) in ti, ab
#11 #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10
#12 explode 'psychotherapy-' / all subheadings
#13 (cognitive near2 therap*) in ti, ab
#14 ((behaviour* or behavior*) near2 therap*) in ti, ab
#15 #12 or #13 or #14
#16 #11 and #15
#17 explode 'computer-' / all subheadings
#18 explode 'automation-computers-and-data-processing' / all subheadings
#19 comput* in ti
#20 interactive voice response in ti, ab
#21 'telephone-' / all subheadings
#22 (telephone* or phone*) in ti
#23 internet in ti, ab
#24 #17 or #18 or #19 or #20 or #21 or #22 or #23
#25 #16 and #24
#26 beating the blues
#27 overcoming depression
#28 restoring the balance
#29 fearfighter
#30 #26 or #27 or #28 or #29
#31 #25 or #30

OHE HEED

CD-ROM version
Search undertaken March 2004

Search terms:
- (depress* or anxi* or panic* or agoraphobi* or obsessive or compulsive) and (cognitive or behavi* or therap* or psychotherap*)

Fields searched:
- All data

MEDLINE

Ovid, 1966–2004
Search undertaken January and March 2004

1 depression
2 exp anxiety/
3 exp anxiety disorders/
4 (depression or depressive for depressed).tw
5 (anxiet$ or anxious).tw
6 panic$.tw
7 agoraphobi$.tw
8 phobi$.tw
9 obsessive compulsive disorder/
10 (obsess$ and (personalit$ or compuls$)).tw
11 or/1-10
12 exp psychotherapy/
13 (cognitive adj2 therap$).tw
14 ((behaviour$ or behavior$) adj2 therap$).tw
15 or/12-14
16 11 and 15
17 exp medical informatics computing/
18 multimedia/
19 computer-assisted instruction/
20 exp decision-making, computer-assisted/
21 computer$.tw
22 Internet.tw
23 interactive voice response.tw
24 therapy, computer-assisted/
25 or/17-24
26 16 and 25
27 "beating the blues".tw
28 "overcoming depression".tw
29 "restoring the balance".tw
30 fearfighter.tw
31 or/27-30
32 26 or 31
33 bibliotherapy/
34 bibliotherap$.tw
35 or/33-34
36 16 and 35
37 32 or 36

PsycINFO

SilverPlatter, 1967–2004
Search undertaken March 2004

#1 explode 'affective-disorders' in de
#2 explode 'anxiety-disorders' in de
#3 explode 'anxiety-' in de
#4 'anxiety-management' in de
#5 explode 'phobias-' in de
#6 'panic-disorder' in de
#7 (depression or depressed or depressive) in ti, ab

#8 (anxiet* or anxious) in ti, ab
#9 panic* in ti, ab
#10 agoraphobi* in ti, ab
#11 phobi* in ti, ab
#12 (obsess* and (personalit* or compuls*)) in ti, ab
#13 #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12
#14 explode 'psychotherapy-' in de
#15 explode 'cognitive-techniques' in de
#16 (cognitive near2 therap*) in ti, ab
#17 ((behaviour* or behavior*) near2 therap*) in ti, ab
#18 #14 or #15 or #16 or #17
#19 #13 and #18
#20 explode 'computers-' in de
#21 explode 'computer-applications' in de
#22 explode 'computer-software' in de
#23 'computer-programming' in de
#24 'human-computer-interaction' in de
#25 computer* in ti, ab
#26 internet in ti, ab, de
#27 interactive voice response* in ti, ab
#28 #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27
#29 #19 and #28
#30 beating the blues
#31 overcoming depression
#32 restoring the balance
#33 fearfighter
#34 #30 or #31 or #32 or #33
#35 #29 or #34

Science and Social Sciences Citation Index

Web of Science, 1981–2004
Search undertaken March 2004

TI=((depress* or anxiet* or panic* or phobi* or agoraphobi* or obsessive or compulsive) and (comput* or multimedia or internet or interactive voice response or telephone* or phone* or audio)); DocType=All document types; Languages=All languages; Databases=SCI-EXPANDED, SSCI; Timespan=All Years

Appendix 4

Economic evaluations, quality of life and economic models methodological search filters used in MEDLINE (Ovid) 1966 to March 2004

Economic evaluations

1 economics/
2 exp "costs and cost analysis"/
3 economic value of life/
4 exp economics, hospital/
5 exp economics, medical/
6 economics, nursing/
7 economics, pharmaceutical/
8 exp models, economic/
9 exp "fees and charges"/
10 exp budgets/
11 ec.fs
12 (cost or costs or costed or costly or costing$).tw
13 (economic$ or pharmacoeconomic$ or price$ or pricing).tw
14 or/1-13

Quality of life

1 exp quality of life/
2 quality of life.tw
3 life quality.tw
4 hql.tw
5 (sf 36 or sf36 or sf thirtysix or sf thirty six or short form 36 or short form thirty six or short form thirty six or shortform 36).tw
6 qol.tw
7 (euroqol or eq5d or eq 5d).tw
8 quality adjusted life$.tw
9 (qaly$ or qald$ or qale$ or qtime$).tw
10 hye$.tw
11 health$ year$ equivalent$.tw
12 health utilit$.tw
13 hui.tw
14 quality of wellbeing$.tw
15 quality of well being.tw
16 qwb.tw
17 or/1-16

Economic models

1 exp models, economic/
2 *models, theoretical/
3 *models, organisational/
4 economic model$.tw
5 markov chains/
6 markov$.tw
7 monte carlo method/
8 monte carlo.tw
9 exp decision theory/
10 (decision$ adj2 (tree$ or analy$ or model$)).tw

Appendix 5
Excluded studies

Reviews or descriptions

Ackermann RT, Williams J. Rational treatment choices for non-major depressions in primary care: an evidence-based review. *J Gen Intern Med* 2002;**17**:293–301.

Altshuler LL, Cohen LS, Moline ML, Kahn DA, Carpenter D, Docherty JP, *et al*. Expert consensus guidelines for the treatment of depression in women: a new treatment tool. *Economics of Neuroscience* 2001; **3**(6):48–61.

Anderson PL, Rothbaum BO, Hodges L. Virtual reality: using the virtual world to improve quality of life in the real world. *Bull Menninger Clin* 2001;**65**:78–91.

Andersson G, Carlbring P. Internet and cognitive behaviour therapy: new opportunities for treatment and assessment. *Cognitive Behaviour Therapy* 2003;**32**:97–9.

Andrews G, Erskine A. Reducing the burden of anxiety and depressive disorders: the role of computerized clinician assistance. *Current Opinion in Psychiatry* 2003; **16**:41–4.

Anon. Improving the recognition and management of depression in primary care. *Effective Health Care* 2002; **7**:1–11.

Bai YM, Lin CC, Chen JY, Liu WC. Virtual psychiatric clinics [6]. *Am J Psychiatry* 2001;**158**:1160–1.

Bower P, Richards D, Lovell K. The clinical and cost-effectiveness of self-help treatments for anxiety and depressive disorders in primary care: a systematic review. *Br J Gen Pract* 2001;**51**:838–45.

Christensen H, Griffiths KM. The prevention of depression using the Internet. *Med J Aust* 2002; **177**(Suppl):S122–5.

Churchill R, Hunot V, Corney R, Knapp M, McGuire H, Tylee A, *et al*. A systematic review of controlled trials of the effectiveness and cost-effectiveness of brief psychological treatments for depression. *Health Technol Assess* 2001;**5**(35).

Freudenstein U, Jagger C, Arthur A, Donner BN. Treatments for late life depression in primary care – a systematic review. *Fam Pract* 2001;**18**:321–7.

Gega L, Marks I. Computer-aided CBT self-help for anxiety and depressive disorders: experience of a London clinic and future directions. *J Clin Psychol* 2004; **60**:147–57.

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Heimberg RG. Current status of psychotherapeutic interventions for social phobia. *J Clin Psychiatry* 2001; **62**(Suppl 1):36–42.

Heimberg RG, Coles ME. Reflections on innovations in cognitive behavioral treatments of anxiety disorders. *Cognitive and Behavioral Practice* 1999;**6**:258–63.

Kennedy SH, Lam RW, Morris B. Clinical guidelines for depressive disorders: summary of recommendations relevant to family physicians. *Can Fam Physician* 2003; **49**:489–91.

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McKendree-Smith NL, Floyd M, Scogin FR. Self-administered treatments for depression: a review. *J Clin Psychol* 2003;**59**:275–88.

Marks I. Potential of computer aids in mental health care. *Br J Psychiatry* (in press).

Marks IM. The maturing of therapy. Some brief psychotherapies help anxiety/depressive disorders but mechanisms of action are unclear. *Br J Psychiatry* 2002; **180**:200–4.

Muhlberger A, Herrmann MJ, Wiedemann GC, Ellgring H, Pauli P. Repeated exposure of flight phobics to flights in virtual reality. *Behav Res Ther* 2001; **39**:1033–50.

Newman MG. The clinical use of palmtop computers in the treatment of generalized anxiety disorder. *Cognitive and Behavioral Practice* 1999;**6**:222–34.

Newman MG, Erickson T, Przeworski A, Dzus E. Self-help and minimal-contact therapies for anxiety disorders: is human contact necessary for therapeutic efficacy? *J Clin Psychol* 2003;**59**:251–74.

Pampallona S, Bollini P, Tibaldi G, Kupelnick B, Munizza C. Patient adherence in the treatment of depression. *Br J Psychiatry* 2002;**180**(FEB):104–9.

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Proulx K. Integrating mindfulness-based stress reduction. *Holistic Nursing Practice* 2003;**17**:201–8.

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Rush AJ, Trivedi M, Fava M. Depression, IV: STAR*D treatment trial for depression. *Am J Psychiatry* 2003;**160**:237.

Taylor CB, Luce KH. Computer- and Internet-based psychotherapy interventions. *Current Directions in Psychological Science* 2003;**12**:18–22.

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Whitfield G, Williams C. Computer-assisted CBT: an option for primary care? 2003 URL: http://www.calipso.co.uk/downloads/Articles/Computer_CBT_primarycare.pdf

Wiederhold BK, Jang DP, Gevirtz RG, Kim SI, Kim IY, Wiederhold MD. The treatment of fear of flying: a controlled study of imaginal and virtual reality graded exposure therapy. *IEEE Trans Inf Technol Biomed* 2002; **6**:218–23.

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Williams C, Whitfield G. Written and computer-based self-help treatments for depression. *Br Med Bull* 2001; **57**:133–44.

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Zuckerman E. Finding, evaluating, and incorporating Internet self-help resources into psychotherapy practice. [review] *J Clin Psychol* 2003;**59**:217–25.

Cost-effectiveness studies

Antonuccio DO. A cost-effectiveness analysis of cognitive behavior therapy and fluoxetine (Prozac) in the treatment of depression. *Behavior Therapy* 1997; **28**:187–210.

Bower P, Byford S, Sibbald B, Ward E, King M, Lloyd M, *et al*. Randomised controlled trial of non-directive counselling, cognitive-behaviour therapy, and usual general practitioner care for patients with depression. II: Cost effectiveness. *BMJ* 2000;**321**:1389–92.

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Gibbons RD. Mixed-effects models for mental health services research. *Health Services and Outcomes Research Methodology* 2000;**1**:91–129.

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Scott J, Palmer S, Paykel E, Teasdale J, Hayhurst H. Use of cognitive therapy for relapse prevention in chronic depression: cost-effectiveness study. *Br J Psychiatry* 2003;**182**:221–7.

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Billipp SH. The psychosocial impact of interactive computer use within a vulnerable elderly population: a report on a randomized prospective trial in a home health care setting. *Public Health Nurs* 2001;**18**:138–45.

Datto CJ, Thompson R, Horowitz D, Disbot M, Oslin DW. The pilot study of a telephone disease management program for depression. *Gen Hosp Psychiatry* 2003; **25**:169–77.

Miller L, Weissman M. Interpersonal psychotherapy delivered over the telephone to recurrent depressives a pilot study. *Depress Anxiety* 2002;**16**:114–17.

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Protocols

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Blackburn K. An evaluation of the clinical effectiveness of the Beating the Blues computer based service-user treatment program, with a cohort of secondary and primary care service-users within East Community Mental Health Team (CMHT). Doncaster and South Humber Healthcare NHS Trust, 2004.

Hurn K. The effectiveness of Beating the Blues: a computer-based treatment for anxiety and depression. Gwent Healthcare NHS Trust, 2004.

Leibowitz J. Use of facilitated self-help for the treatment of anxiety and depression in primary care – comparison of computerised CBT and a self-help manual. An exploratory study. Camden and Islington Mental Health Trust, 2004

Neal M. Computer assisted self-help materials for the treatment of depression. *Cochrane Database Syst Rev* 2003;**3**.

Other

Christensen H, Griffiths KM, Korten A. Web-based cognitive behavior therapy: analysis of site usage and changes in depression and anxiety scores. *J Med Internet*

Res 2000;**4**:e3-Mar. [Description of website usage, not a trial.]

Dunn G, Maracy M, Dowrick C, Ayuso-Mateos JL, Dalgard OS, Page H, *et al.*, ODIN Group. Estimating psychological treatment effects from a randomised controlled trial with both non-compliance and loss to follow-up. *Br J Psychiatry* 2003;**183**:323–31. [Analysis of some trial components.]

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Gruber K, Moran PJ, Roth WT, Taylor CB. Computer-assisted cognitive behavioral group therapy for social phobia. *Behavior Therapy* 2001;**32**:155–65. [Treatment adjunct.]

Keaverny E, Blackburn K. A survey of East Primary Care trust general practitioners' views, about their use of 'Beating the Blues' computer based service-user treatment program. 2004. [Unpublished, small description of some components of a trial.]

Kenardy JA, Dow MGT, Johnston DW, Newman MG, Thomson A, Taylor CB. A comparison of delivery methods of cognitive-behavioral therapy for panic disorder: an international multicenter trial. *J Consult Clin Psychol* 2003;**71**:1068–75. [Treatment adjunct study.]

McDonough M, Marks IM. Teaching medical students exposure therapy for phobia/panic – randomized, controlled comparison of face-to-face tutorial in small groups vs. solo computer instruction. *Med Educ* 2002; **36**:412–17. [Not patients.]

Richards JC, Alvarenga ME. Extension and replication of an internet-based treatment program for panic disorder. *Cognitive Behaviour Therapy* 2002;**31**:41–7. [No comparator.]

Small DK. The development of Christian-oriented computer-assisted cognitive therapy: a pilot study. *Dissertation Abstracts International: Section B: The Sciences and Engineering* 2003;**63**(7-B):3492. [Not an RCT.]

Studies from last review

Bowers W, Stuart S, MacFarlane R, Gorman L. Use of computer administered cognitive behavior therapy with depressed inpatients. *Depression* 1993;**1**:294–9.

Carr AC, Ghosh MD, Marks IM. Computer-supervised exposure treatment for phobias. *Can J Psychiatry* 1988; **33**:112–17.

Ghosh A, Marks IM, Carr AC. Therapist contact and outcome of self-exposure treatment for phobias. *Br J Psychiatry* 1988;**152**:234–8.

Grime PR. *An open, randomised study, to compare the effects of a computerised cognitive behavioural therapy programme (Beating the Blues) plus conventional care, vs conventional care alone, on absence from work due to anxiety, depression or stress. An attempt to evaluate a workplace intervention for stress.* London: Faculty of Occupational Medicine, Royal College of Physicians; 2001.

Jones RB, Kamarzaman Z, Naven LM, Morton WR, Marriott C, Craig N, *et al*. Cognitive behavioural computer therapy for anxiety: difficulties in carrying out a randomised trial and lessons learned. 2001. Unpublished.

Klein B, Richards JC. A brief internet-based treatment for panic disorder. *Behavioural and Cognitive Psychotherapy* 2001;**1**:113–17.

Newman MG. Comparison of palmtop-computer-assisted brief cognitive-behavioural treatment to cognitive-behavioural treatment for panic disorder. *J Consult Clin Psychol* 1997;**65**:178–83.

Newman MG, Kenardy J, Herman S, Barr Taylor C. The use of hand-held computers as an adjunct to cognitive behavior therapy. *Computers in Human Behavior* 1996;**12**:135–43. [Treatment adjunct.]

Newman MG, Consoli AJ, Taylor CB. A palmtop computer program for the treatment of generalized anxiety disorder. *Behav Modif* 1999;**23**:597–619. [Treatment adjunct.]

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Selmi PM, Klein MH, Greist JH, Sorrell SP, Erdman HP. Computer-administered cognitive-behavioural therapy for depression. *Am J Psychiatry* 1990;**147**:51–6.

Shaw SC, Marks IM, Toole S. Lessons from pilot tests of computer self-help for agora/claustrophobia and panic. *MD Computing* 1999;**16**:44-48.

Smith KL, Kirkby KC, Montgomery IM, Daniels BA. Computer-delivered modeling of exposure for spider phobia: relevant versus irrelevant exposure. *J Anxiety Disord* 1997;**11**:489–97.

White J, Jones R, McGarry E. Cognitive behavioural computer therapy for the anxiety disorders: a pilot study. *Journal of Mental Health* 2000;**9**:505–16.

Wright JH, Wright AS, Basco MR, Albano AM, Raffield T, Goldsmith J, *et al*. Controlled trial of computer-assisted cognitive therapy for depression. World Congress of Cognitive Therapy, 2001, Conference Proceedings.

Wright JH, Wright AS, Salmon P, Beck AT, Kuykendall J, Goldsmith LJ, *et al*. Development and initial testing of a multimedia program for computer-assisted cognitive therapy. *Am J Psychother* 2002;**56**:76–86. [Treatment adjunct.]

Appendix 6

Evidence tables for depression/anxiety and phobia/panic studies

This appendix contains the evidence tables with data extracted from the 19 studies included in this update. RCTs and non-randomised trials are presented in separate tables. Depression/anxiety studies are listed first followed by phobia/panic studies. Studies of the included CCBT software packages are listed first within these categories, followed by other studies of either depression/anxiety or phobia/panic.

TABLE 20 *Included studies*

Study	Funding	CCBT components (package)	Study type	Patient population
Depression/anxiety studies: included packages				
Cavanagh, unpublished sponsor submission, 2004[84]	Ultrasis plc	**BtB**	Non-RCT, non-comparative trial	Depression/anxiety
Proudfoot, 2004[87]	NHS Executive-funded Phase I and Ultrasis UK Ltd funded phase II	**BtB**	RCT	Anxiety and/or depression
Marks, 2003[89]	Hillingdon Primary Care Trust and London Research and Development Region; EU Marie Curie Fellowship, ST Solutions and HealthCare Technology Systems	FF (results reported in Schneider[90]) **Cope** BT Steps Balance	Non-RCT; open non-comparative pragmatic trial	Anxiety/depression
Osgood-Hynes, 1998[91]	Pfizer Pharmaceuticals, Inc.	**Cope**: psychotherapy using treatment booklets and telephone calls to a computer-aided IVR system	Open cohort trial	Mild to moderate depression, major depression and/or dysthymia
Whitfield, unpublished sponsor submission, 2004[93]	Media Innovations	**Overcoming Depression**	Non-RCT, open study, non-comparative trial	Depression and depression with anxiety
Depression/anxiety studies: other studies				
Christensen, 2004[95]	National Health and Medical Research Council, Australia	Web-based CBT programme for depression (MoodGym)	RCT	Symptoms of depression
Clarke, 2002[97]	Garfield Foundation Depression Initiative Project	Internet-based CCBT, ODIN	RCT	Mild to moderate depression (this group was compared with a non-depressed group)
Yates, unpublished, 1996[100]	Mental Health Foundation	Computer-guided self-help for depression (Balance)	Non-RCT, comparative trial	Depression/anxiety
Phobia/panic studies: included packages				
Kenwright, 2001[85]	NR	FF	Non-RCT, comparative trial	Phobia/panic
Kenwright, 2004[86]	Hillingdon Primary Care Trust, London Region Research and Development	FF	Non-RCT, open study comparing two delivery methods for FF	Phobia/panic
Marks, 2004[88]	Not reported apart from EU Marie Curie Fellowship	FF	RCT	Phobia or panic
Schneider, 2005[90]	Leeds Community and Mental Health Services NHS Trust, EU Marie Curie Fellowships	FF	RCT	Phobia or panic

continued

TABLE 20 *Included studies (cont'd)*

Study	Funding	CCBT components (package)	Study type	Patient population
Phobia/panic: other studies				
Carlbring, 2001[92]	Swedish Foundation for Health Care Sciences and Allergy Research, Boëthius Foundation, the Swedish Council for Research in the Humanities and Social Sciences, and Swedish Medical Research Council	Web-based CBT package derived from self-help books	RCT	Panic disorder
Carlbring, 2003[94]	Swedish Foundation for Health Care Sciences and Allergy Research, the Boëthius Foundation, Swedish Council for Research in the Humanities and Social Sciences, and Söderström-Köniska Foundation	Web-based CBT package derived from self-help books	RCT	Panic disorder
Carlbring, 2004[96]	Swedish Foundation for Health Care Sciences and Allergy Research, Boëthius Foundation, Swedish Council for Research in the Humanities and Social Sciences, and Söderström-Köniska Foundation	Web-based CBT package derived from self-help books	RCT	Panic disorder
Fraser, 2001[98]	NR	CAVE for spider phobia	RCT	Specific phobia (spiders)
Gilroy, 2000,[107] Gilroy, 2003[99]	NR	CAVE for spider phobia	RCT	Specific phobia (spiders)
Heading, 2001[101]	NR	Prolonged single session of CAVE for spider phobia	RCT	Specific phobia (spiders)
[Commercial-in-confidence information has been removed.]				

TABLE 21 *Study characteristics: RCTs*

Study	Description of CCBT	Study quality	Co-therapy or medication	Comparator	Sample size
Depression/anxiety: included packages					
Proudfoot, 2004[87]	**BtB**	Method of randomisation: sealed envelopes, stratified for medication and duration of current episode; no blinded assessment; power calculation reported; loss to follow-up and some reasons reported	Not currently receiving any psychological treatment or counselling; 119 patients using medication	TAU	502 patients were assessed, 406 of whom were suitable for inclusion. 132 of these declined to participate, leaving 274 to begin the trial: 146 in the BtB group and 128 in the TAU group
Depression/anxiety: others					
Christensen, 2004[95]	MoodGym offers CBT for the prevention of depression	Method of randomisation: computer programme function; no blinded assessment; power calculation reported; loss of follow-up and reasons reported	None of the participants was receiving clinical care from a psychologist or psychiatrist; no information on medication reported	1. Web-based programme, BluePages, which provides depression literacy, offering evidence-based information. 2. Control group, 'attention placebo': telephoned once a week by interviewers to discuss lifestyle and environmental factors	525 were randomised, 182 in the MoodGym group, 165 in BluePages and 178 in the control group
Clarke, 2002[97]	Internet-based intervention focusing on cognitive restructuring techniques adapted from CBT manuals Eight sections covering information on depression, through processes and practical exercises	Method of randomisation: random assignment algorithm encoded in website programme; no blinded assessment; power calculation reported; loss to follow-up reported but not reasons	Provided for the period of 12 months after randomisation. In the CCBT group: 55.1% made mental health outpatient visits; 16.3% were dispensed TCAs, 47.1% SSRIs, 20% bupropion, 5.6% lithium carbonate, 20.4% benzodiazepine and 2.8% venlafaxine. The comparable figures for the control group were: 48.3% made mental health outpatient visits; 10.5% were dispensed TCAs; 49.0% SSRIs, 15.9% dispensed bupropion, 3.2% lithium carbonate, 24.1% benzodiazepine and 8.5% venlafaxine. All participants were free to obtain usual care for depression	No access to ODIN site but access to non-interactive website providing information on a range of health concerns including depression and usual care	526 initially accessed the study website and 299 completed baseline assessment; 144 were randomised to ODIN (116 were in the depression group) and 155 to usual care control group (107 were in the depression group)

continued

TABLE 21 *Study characteristics: RCTs (cont'd)*

Study	Description of CCBT	Study quality	Co-therapy or medication	Comparator	Sample size
Phobia/panic: included studies					
Marks, 2004[88]	**FF**	Method of randomisation: opaque sealed envelopes in three sets, one per phobia type; assessors blinded; power calculation reported; loss to follow-up reported and reasons mostly reported	Nine patients (11%) were on TCAs, five (6%) on an SRI, two (3%) on other antidepressants and four (5%) on benzodiazepines; 52 had seen a healthcare professional for their problem in the past 3 months	1. Self-exposure therapy with a clinician 2. Computer-guided self-relaxation	129 were initially screened, 94 were eligible, one refused, leaving 93 patients who were randomised. FF group $n = 37$; clinician group $n = 39$ and relaxation group $n = 17$; of these, data were lost for three patients, so these patients were excluded from data analysis
Schneider, 2005[90]	**FF**	Method of randomisation: opaque sealed envelopes in the required 2:1 ratio, stratified for phobia type; assessors blinded; power calculation reported; loss to follow-up and reasons reported	19 on an SSRI, six on another antidepressant, nine on a sedative, six on a β-blocker and two on an antipsychotic	MA: net-guided minimal CBT including relaxation but excluding exposure, including most of the Balance system, used for depression/anxiety	94 applied, 79 were screened, 68 were suitable and were randomised, 45 to FF and 23 to MA
Phobia/panic: other studies					
Carlbring, 2001[92]	The programme consists of six modules: psychoeducation, breathing retraining, thought processes in relation to anxiety, interoceptive exposure, exposure *in vivo* and relapse prevention. Each module ends with questions to be answered and e-mailed to an assessor to judge whether the participant is ready to move on to the next module	Method of randomisation: pairwise drawing of lots; no blinded assessment; no power calculation reported; loss to follow-up and reasons fully reported	37% had not previously received any treatment for their PD. 64% were taking psychoactive medication during the study, the majority (44%) taking SSRIs. One participant was receiving psychodynamic therapy	WLC	500 completed the application form; 41 participants met the inclusion criteria, 10 of whom did not complete baseline measurements and five withdrew after random allocation

continued

TABLE 21 *Study characteristics: RCTs (cont'd)*

Study	Description of CCBT	Study quality	Co-therapy or medication	Comparator	Sample size
Carlbring, 2003[94]	As above in Carlbring[92]	Method of randomisation: true random number service; no blinded assessment; no power calculation reported; loss to follow-up and reasons reported	In the CCBT group 36.4% were taking SSRIs, 18.2% benzodiazepines, 36.4% TCAs, 9.1% β-blockers and 9.1% psychotherapy. In the control group 63.6% were taking SSRIs, 27.3% benzodiazepines, 9.1% TCAs, 0% β-blockers and 18.2% psychotherapy	AR: nine modules on relaxation and relapse prevention	53 people were interviewed initially, of whom 22 fulfilled the inclusion criteria, 11 in each group
Carlbring, 2004[96]	Ten modules including information exercises and essay questions, similar to above in Carlbring.[92]	Method of randomisation: true random number service; no blinded assessment; no power calculation reported; loss to follow-up and reasons reported	In the CCBT group 36% were taking SSRIs, 4% benzodiazepines, 4% TCAs and 8% β-blockers. In the control group 25% were taking SSRIs, 12.5% benzodiazepines, 8.3% TCAs and 4% β-blockers	Treatment with therapist similar to the content of the CCBT programme (TCBT)	Initially 427 completed the computerised interview and 363 were excluded (reasons given). 64 people were called to an in-person interview, of whom 59 were interviewed. Ten were excluded owing to a diagnosis other than PD. 49 people participated in the study, 25 in the CCBT group and 24 in the control group
Fraser, 2001[98]	Participants are asked to assist an animated screen figure to overcome his/her fear of spiders using a point-and-click technique to move the figure through various exposure scenarios. The programme has four levels: exposure to spider picture, plastic spider, dead spider and live spider. There is an on-screen anxiety 'thermometer'	Method of randomisation: NR; no blinded assessment; no power calculation reported; loss to follow-up and reasons reported, but dropouts were replaced with new patients and not clear as to how they were chosen	NR	Two groups of CAVE were compared in this trial: three sessions vs six sessions	39 presented for assessment and the first 30 meeting diagnostic criteria were included, 15 in the three-session group and 15 in the six session group

continued

TABLE 21 *Study characteristics: RCTs (cont'd)*

Study	Description of CCBT	Study quality	Co-therapy or medication	Comparator	Sample size
Gilroy, 2000,[107] Gilroy, 2003[99]	As described in Fraser[98]	Method of randomisation: not reported; blinded assessment was undertaken; power calculation not reported; loss to follow-up and reasons reported, but dropouts were replaced with new patients and not clear as to how they were chosen	Three participants in the relaxation group received further psychological treatment during the 33-month follow-up period	1. LGE 2. Progressive muscle relaxation (placebo) (PMR)	52 presented for initial assessment and the first 45 were randomly assigned to the three groups (15 in each). 42 of the original 45 agreed to participate in the follow-up phase
Heading, 2001[101]	As described in Fraser[98]	Method of randomisation: not reported; blinded assessment was undertaken; no power calculation reported; loss to follow-up reported, but not reasons	NR	1. Prolonged single session of LGE 2. WLC	58 responded to adverts, of whom 45 met inclusion criteria. Five withdrew before treatment, leaving 40 allocated to treatment, 13 in the CAVE group, 14 in the LGE group and 13 in the WLC group

[Commercial-in-confidence information has been removed.]
AR, applied relaxation; LGE, live graded exposure; MA, Managing Anxiety, PMR, progressive muscle relaxation; SRI, serontonin reuptake inhibitor.

TABLE 22 *Study characteristics: non-RCTs*

Study	Description of CCBT	Study quality	Co-therapy or medication	Comparator	Sample size
Depression/anxiety: included packages					
Cavanagh, unpublished sponsor submission, 2004[84]	**BtB**	No comparator group; no allocation; no blinded assessment; loss to follow-up reported, but not reasons; no power calculation reported; no mention of prognostic factors and no adjustment for confounding variables	NR	None	219
Marks, 2003[89]	**Cope** for depression/anxiety; balance for general anxiety/depression (described in Yates[100])	No comparator group; no mention of how patients chosen for allocation to Cope; no blinded assessment; loss to follow-up reported, but not reasons; no power calculation; no description of prognostic factors and no adjustment for confounding	Of the 139 patients (from the four programmes) who gave data, 45% were having current treatment from their GP or mental health professional and about half were on psychotrophic medication	None	A total of 355 referrals to the four programmes, 266 were screened, 210 were suitable, of whom 42 (20%) refused treatment; 108 (51%) had post-treatment data available; 60 (29%) dropped out or were lost to follow-up; post-treatment data available for 33 Balance patients and 39 Cope patients
Osgood-Hynes, 1998[91]	**Cope**	Open cohort study; no comparator, no mention of how patients chosen for Cope; description of dropouts, all measures self-rated; no power calculation; no description of prognostic factors and no adjustment for confounding	Eight patients (20%) were on antidepressant medication, on a stable dose	None	41
Whitfield, unpublished sponsor submission, 2004[93]	**Overcoming Depression**	No comparator group; no mention of allocation to Overcoming Depression; no blinded assessment; loss to follow-up reported, but not reasons; no power calculation; no mention of prognostic factors, but some analysis of confounding factors (completers and non-completers)	Nine of 22 atttending screening interview were on psychiatric medication (41%)	None	80 initially referred, 22 of whom attended the screening assessment interview and 20 attended at least one session

continued

TABLE 22 *Study characteristics: non-RCTs (cont'd)*

Study	Description of CCBT	Study quality	Co-therapy or medication	Comparator	Sample size
Depression/anxiety: others					
Yates, unpublished, 1996[100]	CD-ROM of a single session consisting of 15 options, nine of which were 'knowing' or 'doing' options related to home exercises and practical assignments related to favoured coping strategies; option to return for more sessions	Patients assigned alternately to either Balance or WLC; no blinded assessment; loss to follow-up reported and some reasons given; no power calculation; prognostic factors identified and compared between two groups; adjustment for confounders: medication, baseline scores, gender and number of sessions	12 of 20 in the Balance group and seven of 19 in the control group were receiving medication for anxiety/depression	WLC	Initially 45 referrals, with 22 in the Balance group and 23 in the WLC group
Phobia/panic: included studies					
Kenwright, 2001[85]	**FF**	Comparison with a clinic cohort, but allocation did not take place; no blinded assessment; loss to follow-up reported, but not reasons; no power calculation; no mention of prognostic factors and no adjustment for confounding	NR	Clinician (nurse therapist)-guided self-exposure therapy	54 FF patients and 31 clinician-guided therapy
Kenwright, 2004[86]	**FF**	Comparison between two types of FF delivery, with patients chosen for the Internet version on the basis of their inability to come to clinic; no blinded assessment; loss to follow-up reported, but not reasons; no power calculation; no mention of prognostic factors and no adjustment for confounding factors	NR	Ten patients using Internet FF at home were compared with 17 patients using FF in a clinic setting	56 patients were initially felt to be suitable for FF, 13 refused, 45 started treatment with FF and 37% dropped out. Results reported for: ten in the home Internet FF group and 17 in the FF clinic group

TABLE 23 *Therapy details: RCTs*

Study	Recruitment	Number of sessions	Length of sessions	Therapist contact	Professional background of therapist
Depression/anxiety: included packages					
Proudfoot, 2004[87]	Referral by GP or screening with GHQ	One introductory session and eight therapy sessions	Introductory session 15 minutes, therapy sessions 50 minutes	Maximum of 80 minutes over the eight sessions (up to 5 minutes at beginning and end of each session)	Practice nurse
Depression/anxiety: others					
Christensen, 2004[95]	Mailshot questionnaire to random selection of 27,000 people on the electoral register	BluePages and MoodGym both consisted of five sections, one per week, with a sixth overview and revision section. Control: telephoned weekly by lay interviewers	NR for all three groups	No therapist contact reported in any group	Lay interviewers
Clarke, 2002[97]	Study brochures were sent to 6994 HMO members with a diagnosis of depression and 6996 matched sample with no diagnosis of depression	Mean number of sessions: 2.6 (range 1–20)	Self-paced; length NR	No therapist contact reported	No therapist contact reported
Phobia/panic: included studies					
Marks, 2004[88]	Referred by health professionals to Behavioural Psychotherapy Unit, Maudsley Hospital, or answered notices in GP practices or phobia self-help groups	Six sessions and two follow-up sessions (1 month and 3 months later)	1 hour	Total mean therapist time per patient was 76 ± 43 minutes for the FF group	Two nurses and one psychiatrist, who were experienced behaviour therapists
Schneider, 2005[90]	27 from mental health professional, two from GP, 29 from Internet information, 16 from magazine advertisements and 20 did not say	Six	19 on an SSRI, six on another antidepressant, nine on a sedative, six on a β-blocker and two on an antipsychotic	Screening (40 minutes) and six support telephone calls (about 18 minutes each); total of 115 ± 44 minutes per patient, excluding screening	Two psychiatrists with experience of CBT

continued

TABLE 23 *Therapy details: RCTs (cont'd)*

Study	Recruitment	Number of sessions	Length of sessions	Therapist contact	Professional background of therapist
Phobia/panic: other studies					
Carlbring, 2001[92]	Newspaper and health magazine articles and Internet link from the home page of the Swedish National Association for people with PD	Six modules over 7–12 weeks, number of sessions unclear	Participants given 14 days to complete each module	No direct contact with participant. All contact via Internet/e-mail. Mean time of 90 minutes per participant for assessment, administration and responding to e-mails	NR
Carlbring, 2003[94]	Waiting list from another study cohort originally recruited by newspaper and health magazine articles and Internet link from the home page of the Swedish National Association for people with PD	Six modules; number of sessions NR	NR	No direct contact with participant. All contact via Internet/e-mail. Mean total time of 30 minutes spent by the therapist on each participant using standardised e-mail messages	NR
Carlbring, 2004[96]	Waiting list from another study cohort originally recruited by newspaper and health magazine articles and Internet link from the home page of the Swedish National Association for people with PD	Ten modules; number of sessions NR	CCBT: ten modules, length of sessions NR TCBT: ten weekly individual sessions, 45–60 minutes each	CCBT: NR apart from initial SCID interview. All contact via Internet/e-mails TCBT: 45–60 minutes per session	CCBT: NR TCBT: clinical psychologists, graduate students in clinical psychology
Fraser, 2001[98]	Newspaper and noticeboard advertisements	1. Three sessions 2. Six sessions	45 minutes per session	Therapist carried out the assessment and was present for the first 5 minutes of the treatment	Postgraduate student in clinical psychology
Gilroy, 2000,[107] Gilroy, 2003[99]	Newspaper and noticeboard advertisements	Three at 2-week intervals	45 minutes	Therapist carried out the three assessments and was present for the first 5 minutes of the first session	Masters student in psychology
Heading, 2001[101]	Newspaper and noticeboard advertisements	One	3 hours	Therapist carried out the assessment and was present for the first 5 minutes of the session and reset the programme every 45 minutes	Honours student in psychology

[Commercial-in-confidence information has been removed.]
HMO, health maintenance organisation; SCID, Structured Clinical Interview for DSM-IV.

TABLE 24 *Therapy details: non-RCTs*

Study	Recruitment	Number of sessions	Length of sessions	Therapist contact	Professional background of therapist
Depression/anxiety: included packages					
Cavanagh, unpublished sponsor submission, 2004[84]	Identification by healthcare professional	One introductory session and eight therapy sessions	Introductory session 15 minutes, therapy sessions 50 minutes	5 minutes at first computer session, other therapist time NR	Local service receptionist or secretary
Marks, 2003[89]	Self-referral; advertised in local GP surgeries, community mental health centres, psychiatric outpatient clinics, local papers, Yellow Pages, voluntary organisations and NHS Direct	Cope: 122 ± 83 minutes on telephone calls, mean 11 ± 8 (range 0–34) calls	NR	Cope: 46 ± 46 minutes (face to face or live support by telephone)	Nurse therapists
Osgood-Hynes, 1998[91]	Referrals from mental health and primary care professionals and newspaper advertisements	Initial clinic visit to view videotape, make first two calls and receive explanation of Cope materials. 11 toll-free calls; 12-week final clinic visit	Calls after initial clinic visit lasted 8–23 minutes. Length of two clinic visits NR	Clinician assessment at initial visit	NR
Whitfield, unpublished sponsor submission, 2004[93]	Consecutive referrals to the clinical psychology service	Six	45–60 minutes	Screening interview 20–30 minutes and 47.4 minutes total for the six sessions	Screening by clinical psychologist, self-help support nurse at sessions
Depression/anxiety: others					
Yates, unpublished, 1996[100]	GP referral	One, with option for more	1 hour plus 10–30-minute debriefing	A few minutes at the beginning of the session and 10–30 minutes afterwards, queries answered throughout the session	Psychologist

continued

TABLE 24 *Therapy details: non-RCTs (cont'd)*

Study	Recruitment	Number of sessions	Length of sessions	Therapist contact	Professional background of therapist
Phobia/panic: included studies					
Kenwright, 2001[85]	Advertisements in GP surgeries and self-help groups for FF patients; clinician referrals came from GPs and psychiatrists	Mean number of sessions was 4, range not reported	Mean total 202 minutes (139 minutes on computer and 63 minutes with nurse)	Mean total per patient of 63 minutes with a nurse including screening (20 minutes)	Clinical nurse specialists
Kenwright, 2004[86]	Self-referral	Unlimited access for 12-week period for Internet group, seven sessions for clinic group	NR, but FF was used 16 ± 11 times over 66 ± 2.5 days by Internet FF group. Clinic FF users spent 237 ± 57 minutes at the clinic	Internet FF users had 113 ± 28.1 minutes of therapist time. Clinic FF users had 99 ± 11.4 minutes of therapist time	Nurse therapist

TABLE 25 *Study site, follow-up and inclusion/exclusion criteria: RCTs*

Study	Study site	Length of follow-up	Numbers lost to follow-up	Reasons for loss to follow-up	Inclusion criteria	Exclusion criteria
Depression/anxiety: included packages						
Proudfoot, 2004[87]	Nine GP surgeries (seven in phase 1 and four in phase 2) in London and south-east England	6 months post-treatment	BtB: $n = 40$ ($n = 54$ from randomisation allocation) TAU: $n = 31$ ($n = 43$ from randomisation allocation)	12 in each group lost to human error, other reasons NR apart from in phase 2, seven of 12 dropouts of the 55 patients randomised to BtB quit owing to dissatisfaction with treatment. Total of 48 patients had no postrandomisation values	Familiarity with computers; GP patients aged 18–75 years suffering from depression, mixed anxiety/depression, anxiety disorder (including phobias or panic), not currently receiving any form of psychological treatment or counselling	Active suicidal ideas, current or lifetime diagnosis of psychosis or organic mental disorder or alcohol and or drug dependence, medication for anxiety and/or depression continuously for 6 months or more before entry; unable to attend eight sessions and unable to read or write English
Depression/anxiety: others						
Christensen, 2004[95]	Home Internet treatment, Canberra, Australia	6 weeks	BluePages $n = 25$, MoodGym $n = 46$, Control $n = 19$	MoodGym: no reason given $n = 12$, not contactable $n = 10$, too busy $n = 7$, family reasons $n = 3$, did not like it $n = 6$, trouble with Internet $n = 5$, other $n = 3$ BluePages: too busy $n = 5$, not contactable $n = 2$, trouble with Internet $n = 1$, ill $n = 1$, did not like it $n = 1$, incorrectly included $n = 1$, no reason given $n = 4$ Control: no reason given $n = 14$, lost interest $n = 1$, family problem $n = 1$, too busy $n = 1$, not contactable $n = 1$, ill $n = 1$	Scored ≥ 22 on the Kessler psychological distress scale	Receiving clinical care from either a psychologist or a psychiatrist

continued

TABLE 25 *Study site, follow-up and inclusion/exclusion criteria: RCTs (cont'd)*

Study	Study site	Length of follow-up	Numbers lost to follow-up	Reasons for loss to follow-up	Inclusion criteria	Exclusion criteria
Clarke, 2002[97]	Internet-based treatment, Portland, OR, USA	32 weeks	79 did not complete at least one follow-up assessment. 141 did not complete 4-week assessment; 104 did not complete 8-week assessment, 103 did not complete 16-week assessment; 122 did not complete 32-week assessment	NR	For the 'depressed' patient group, a recorded diagnosis of depression with recorded recent treatment appropriate for depression (medication and psychotherapy). For the 'non-depressed group', no diagnosis of depression or recorded recent treatment appropriate for depression	NR
Phobia/panic: included studies						
Marks, 2004[88]	Behavioural Psychotherapy Unit, Maudsley Hospital, London, UK	3 months	At 1-month follow-up: FF group 18/37 (48.6%), clinician group 12/39 (30.8%), relaxation group 3/17 (17.7%); 3-month follow-up data NR	Reasons reported for 27 of 30 dropouts at study completion: two patients had moved, four had job commitments, five had difficulties going to clinic, one had a medical condition, six were other reasons and nine were unknown	DSM-IV criteria agoraphobia without PD, PD with agoraphobia, social phobia or simple phobia, not on a benzodiazepine or a diazepam-equivalent dose of >5 mg per day; not >21 units (men) or >14 units (women) of alcohol a week; not begun or changed dose or type of antidepressant medication within the past 4 weeks	Active psychotic illness, suicidal depression or disabling cardiac or respiratory disease

continued

TABLE 25 *Study site, follow-up and inclusion/exclusion criteria: RCTs (cont'd)*

Study	Study site	Length of follow-up	Numbers lost to follow-up	Reasons for loss to follow-up	Inclusion criteria	Exclusion criteria
Schneider, 2005[90]	UK based, but participants were as follows: 22 London, 65 rest of England, five Wales, one USA, one Canada Computer use: home 59, office 11, library 5, Internet café 7, family/friends 7, clinic 2 (not self-help clinic); 53 were at one site and 15 were at more than one site	14 weeks (10 weeks for treatment, 1-month follow-up period)	45 randomised to FF, two dropped out before beginning treatment, of the 43 who used FF, 33 completed and 31 completed 1-month follow-up 23 randomised to MA, two withdrew before treatment, 15 completed and 13 completed 1-month follow-up	Therapy too time-consuming $n = 4$, work commitment $n = 3$, preferred face-to-face therapy $n = 3$, computer crashed $n = 2$, worsening depression $n = 2$, concerned about medical record $n = 1$, improved $n = 1$, uncontactable $n = 4$	Presence of agoraphobia with or without PD, social phobia or specific phobia, rated ≥ 4 on the 0–8 global phobia, main problem and main goal, phobia duration >1 year	Current psychotic illness, suicide plans, severe depression; disabling cardiac or respiratory disease, benzodiazepine or diazepam-equivalent dose of >5 mg per day, alcohol abuse, change in antidepressant medication, failed past exposure therapy of five or more sessions, reading disorder
Phobia/panic: other studies						
Carlbring, 2001[92]	Internet-based treatment, Sweden	7–12 weeks depending on the individual	Before baseline measurements: ten; after randomisation: five (four CCBT and one WLC)	CCBT: lack of time $n = 3$; another patient dropped out when diagnosed with cancer. Control: dropout gave no reason	DSM-IV criteria for PD; duration of ≥ 1 year; 18–60 years old; MADRS-SR depression total of <21 points and <4 points on the suicide question; PD as a primary problem; at least one full-blown panic attack or one limited symptom attack during pretreatment baseline; consistency of medication for PD	Other psychiatric co-morbidity in immediate need of treatment; concurrent CBT; therapy for <6 months; previous health professional contact as a consequence of panic attacks; epilepsy, kidney problems, strokes, organic brain syndrome, emphysema, heart disorder or chronic high blood pressure

continued

TABLE 25 *Study site, follow-up and inclusion/exclusion criteria: RCTs (cont'd)*

Study	Study site	Length of follow-up	Numbers lost to follow-up	Reasons for loss to follow-up	Inclusion criteria	Exclusion criteria
Carlbring, 2003[94]	Internet-based treatment, Sweden	7-month period	Five (three from CCBT group and two from AR group)	Lack of time for most	Duration of PD of ≥ 1 year; 18–60 years old; MADRS-SR <21 and <4 on the suicide question; PD as a primary problem; at least one full-blown panic attack or one limited symptom attack during pretreatment baseline; consistency of medication for PD	Other psychiatric co-morbidity in immediate need of treatment; concurrent CBT or in past 6 months; previous health professional contact as a consequence of panic attacks; epilepsy, kidney problems, strokes, organic brain syndrome, emphysema, heart disorder or chronic high blood pressure
Carlbring, 2004[96]	Internet-based treatment, Sweden	1 year	Three from the CCBT group, three from the TCBT group	Lack of time was the main reason given	Duration of PD ≥ 1 year; 18–60 years old; MADRS-SR <21 and <4 points on the suicide questionnaire; PD as a primary problem; consistency of medication for PD	Other psychiatric co-morbidity in immediate need of treatment; concurrent CBT or in past 6 months; previous health professional contact as a consequence of panic attacks; epilepsy, kidney problems, strokes, organic brain syndrome, emphysema, heart disorder
Fraser, 2001[98]	University setting, Australia	4 weeks after treatment	Seven (four in the three-session group and three in the six-session group). Note: dropouts were replaced by new participants	Work commitments $n = 1$, travel commitments $n = 3$, participant said was cured $n = 1$, programme not helpful $n = 1$	Diagnosis of specific phobia (spider) by CIDI and unable to perform step 7 of the BAT; 16–65 years old	No concurrent non-anxiety disorder; alcohol or illicit drug abuse problem; taking psychotropic medication; undertaken an exposure-based treatment in the past

continued

TABLE 25 *Study site, follow-up and inclusion/exclusion criteria: RCTs (cont'd)*

Study	Study site	Length of follow-up	Numbers lost to follow-up	Reasons for loss to follow-up	Inclusion criteria	Exclusion criteria
Gilroy, 2000,[107] Gilroy, 2003[99]	University setting, Australia	33 months	Five (four from PMR group, one from LGE group). Note: dropouts were replaced by new participants From follow-up phase: three more	Time constraints $n = 4$, moving interstate $n = 1$, had undergone prior relaxation treatment $n = 1$, uncontactable $n = 2$	Diagnosis of specific phobia (spider) by the CIDI – Auto and unable to perform step 7 of the BAT; 16–60 years old. To control for gender differences, female participants only were recruited; minimum duration of phobia of 1 year	Concurrent non-anxiety disorder; similar treatment in the past; history of affective disorder or psychosis
Heading, 2001[101]	University setting, Australia	4 weeks	One from the LGE group	NR	Diagnosis of specific phobia (spider) by the CIDI – Auto 2.1 and unable to perform step 7 of the BAT. 16–65 years old	Concurrent non-anxiety disorder; similar treatment in the past; substance-abuse problem; taking psychotropic medication

[Commercial-in-confidence information has been removed.]
CIDI, Composite International Diagnostic Interview.

TABLE 26 *Study site, follow-up and inclusion/exclusion criteria: non-RCTs*

Study	Study site	Length of follow-up	Numbers lost to follow-up	Reasons for loss to follow-up	Inclusion criteria	Exclusion criteria
Depression/anxiety: included packages						
Cavanagh, unpublished sponsor submission, 2004[84]	Eight general practices (four rural, four urban), two community mental teams and one primary care clinical psychology service in Doncaster, Cheshire, Oldham, Wantage and Newport, UK	6 months	135 patients (61.6%) completed all eight sessions, 40 patients (18%) completed 6-month follow-up questionnaire	NR	16–75 years old, suffering from depression, anxiety/depression or anxiety disorder including panic or phobias	Currently receiving face-to-face psychological treatment or counselling, suicidal ideation, current diagnosis of psychosis, organic mental disorder or in acute phase of drug/alcohol dependence
Marks, 2003[89]	Free self-help clinic within West London Mental Health Trust and Charing Cross Campus of Imperial College, UK	Cope: 65 ± 59 days	Cope $n = 16$ (one additional patient refused Cope)	39 of the total 102 refusers and dropouts gave reasons for refusing or not completing: hard to attend clinic $n = 13$, therapy unhelpful $n = 10$, wanting face-to-face help $n = 8$, low motivation $n = 8$, offered help elsewhere $n = 2$, problem improved $n = 2$	Presence of an anxiety or depressive disorder, motivation to use self-help	Substance misuse, psychosis, active suicidal plans
Osgood-Hynes, 1998[91]	Boston, MA, USA ($n = 12$), Madison WI, USA ($n = 15$), London, UK ($n = 14$)	12 weeks	13	Two patients did not use Cope after the enrolment visit, 11 used Cope but stopped using it and did not attend the 12-week office visit	Mild to moderate depression defined by HAM-D, scores of 12–20 were included; 21–75 years old	Current or lifetime psychotic disorder, personality disorder likely to interfere with study participation, substance abuse disorder (in the past 6 months), serious suicide risk or currently undergoing CBT
Whitfield, unpublished sponsor submission, 2004[93]	Clinical Psychology Service, Glasgow, UK	3 months	20 entered the study, five (25%) dropped out after week 1, one dropped out after week 3	NR	Referral letter noted presence of depression/low mood as a major problem	Age <16 or >65 years, current active suicidal intent, psychosis, unable to read

continued

TABLE 26 *Study site, follow-up and inclusion/exclusion criteria: non-RCTs (cont'd)*

Study	Study site	Length of follow-up	Numbers lost to follow-up	Reasons for loss to follow-up	Inclusion criteria	Exclusion criteria
Depression/anxiety: others						
Yates, unpublished, 1996[100]	GP practices and research office, Newcastle and Gateshead, UK	1 month	Two out of 22 in Balance group and three of 23 in control group	Balance group: one could not be traced after treatment and one changed his mind about using the computer Control group: two illness, one could not be traced	GP's clinical judgement	History of major psychiatric illness or anxiety following a major life trauma
Phobia/panic: included studies						
Kenwright, 2001[85]	Self-care centre located within an outpatient unit in London, UK	10 weeks	22 dropped out (41%)	NR	Patients with problems suitable for computer-guided care	Serious mental illness, severe depression, drug or alcohol misuse
Kenwright, 2004[86]	Home use and self-help clinic in west London, UK	16 weeks (1 month after end of treatment)	Data only reported for ten FF Internet group and 17 FF clinic group. 16 (37%) of original sample dropped out before allocation to two groups	NR	Presence of phobia or PD, motivation to try self-help	Substance misuse, psychosis or active suicidal plans

TABLE 27 *Patient characteristics: RCTs*

Study	Methods for diagnosis of disorder	Age, mean ± SD (years)	Gender (Male/female)	Ethnicity	Education/ socio-economic background	Patient history	Baseline comparability
Depression/anxiety: included packages							
Proudfoot, 2004[87]	GHQ score of ≥4 and ≥12 on the computerised version of PROQSY	BtB 43.6 ± 14.3; TAU 43.4 ± 13.7	BtB 40/106; TAU 32/96	BtB 90% white; TAU 87% white	BtB: 63% had over 12 years of education and 66% were employed TAU: 63% had over 12 years of education and 58% were employed	BtB 15% had severe depressive episode, 6% phobias, 6% PD, 49% mixed anxiety/depression and 24% mid/moderate depressive episode TAU: 9% severe depressive episode, 13% phobias, 5% PD, 55% mixed anxiety/depression and 19% mild/moderate depressive episode	NR
Depression/anxiety: others							
Christensen, 2004[95]	Kessler psychological distress scale	36.43 ± 9.4	150/375	NR	Married or cohabiting: Blue Pages 61%; MoodGYM 54%; control 56% Years spent in education (mean ± SD): Blue Pages 15 ± 2.4; MoodGym 14.6 ± 2.4; control 14.4 ± 2.3	More than 90% reported being markedly depressed before the study, with 64% reporting that they had sought professional help	Reported; the groups did not differ
Clarke, 2002[97]	No independent confirmation of diagnosis with structured diagnostic interview	For both depressed and not depressed groups: CCBT 43.3 ± 12.2; control 44.4 ± 12.4	For both depressed and not depressed groups % female: CCBT 73.6%; control 77.4%	Ethnic minority: CCBT 5.8%; control 5.8%	CCBT group: 60.3% married, 45.4% college graduate Control group: 64.0% married, 39.4% college graduate	NR	The CCBT and control group did not differ in terms of gender, age or baseline CESDP score

continued

TABLE 27 *Patient characteristics: RCTs (cont'd)*

Study	Methods for diagnosis of disorder	Age, mean ± SD (years)	Gender (Male/female)	Ethnicity	Education/ socio-economic background	Patient history	Baseline comparability
Phobia/panic: included studies							
Marks, 2004[88]	DSM-IV criteria; rating of ≥4 on the global phobia scale of the FQ	38 ± 12	28/62	NR	Length of education (mean ± SD) 11 ± 2 years	Illness duration (mean ± SD) 17 ± 12 years	Yes, apart from more FF patients than clinician patients were sent by GP rather than self-referred (ns)
Schneider, 2005[90]	Pretreatment assessment questionnaire; ICD-10 checklist	39 ± 11	18/50	NR	Total sample 35 married/cohabiting, 33 single, separated, widowed or divorced; mean years of education 12 ± 2	Problem duration (mean ± SD) 14 ± 13 years Diagnosis: agoraphobia with panic: 2 FF, 0 MA; agoraphobia without panic: 16 FF, 8 MA; social phobia: 14 FF, 3 MA; secondary diagnoses included the above and specific phobia, depressive disorder, adjustment disorder, substance abuse and OCD	The two groups did not differ significantly on any demographic or clinical feature
Phobia/panic: other studies							
Carlbring, 2001[92]	CIDI-sf; PD section of the ADIS for DSM-IV	34 ± 7.5 (range 21–51)	12/29	NR	NR	34% of the sample had not received any treatment before the study	The two groups did not differ significantly on any of the pretreatment measures
Carlbring, 2003[94]	DSM-IV (SCID) criteria for PD	37.9 ± 8.6	7/15	NR	NR	Total group: years with PD (mean ± SD) 10.4 ± 5.2	The two groups did not differ significantly on any of the pretreatment measures

continued

TABLE 27 *Patient characteristics: RCTs (cont'd)*

Study	Methods for diagnosis of disorder	Age, mean ± SD (years)	Gender (Male/female)	Ethnicity	Education/ socio-economic background	Patient history	Baseline comparability
Carlbring, 2004[96]	CIDI 2.1: PD sections, ADIS for DSM-IV and SCID	35 ± 7.7	14/ 35	NR	NR	Total group: years with PD (mean ± SD) 9.0 ± 9.3	The two groups did not differ significantly on any of the pretreatment measures
Fraser, 2001[98]	CIDI, BAT	32.6 ± 10.6 (range 17–54)	Initially 28 female and two male participants, but after dropouts all female	All white	15 participants were employed, 12 unemployed and three students	NR	No significant difference between groups in relation to age, estimated intellectual level or any outcome measures
Gilroy, 2000,[107] Gilroy, 2003[99]	CIDI, BAT; National Adult Reading Test (NART)	33.11 ± 10.85 (range 17–59)	Females only	All white	30 participants were employed, 11 unemployed and four students	NR	No significant difference between groups apart from PT total scores, which showed a significant difference between the LGE and PMR groups
Heading, 2001[101]	CIDI-A	34.9 ± 11.0 (range 18–61)	2/38	All white	26 were employed, seven unemployed and seven students	NR	No significant difference between the groups, pretreatment, in age, estimated intelligence or any of the outcome measures

[Commercial-in-confidence information has been removed.]
ADIS, Anxiety Disorders Interview Schedule; CIDI-A, Composite International Diagnostic Interview – Auto 2.1; CICI-SF, Composite International Diagnostic Interview – shortened form; PROQSY, Programmable Questionnaire System.

TABLE 28 *Patient characteristics: non-RCTs*

Study	Methods for diagnosis of disorder	Age	Gender (Male/female)	Ethnicity	Education/ socio-economic background	Patient history	Baseline comparability
Cavanagh, unpublished sponsor submission, 2004[84]	GHQ-12 score of ≥ 4	43.5 ± 11.6	88/131	NR	NR	Problem duration: (mean ± SD) 6.66 ± 9.1 years (range 1 month to 47 years); information available for 196 of the 219 patients: 32 (16%) reported depression, 31 (16%) reported anxiety, 128 (65%) reported mixed anxiety/depression, four (2%) reported another specific problem	NA
Marks, 2003[89]	Screening questionnaire; ICD-10	For total sample: mean age of completers (n = 108) 39 ± 12; mean age of non-completers (n = 60) 36 ± 11	For total sample: completers 51/57; non-completers 32/29	NR	For total sample: Completers: high professional n = 7, middle professional n = 30, low professional n = 20, manual worker n = 9, unemployed/ student n = 38, unknown n = 4 Non-completers: high professional n = 1, middle professional n = 15, low professional n = 16, manual worker n = 4, unemployed/ student n = 22, unknown n = 2	Problem duration for total sample (mean ± SD) 8 ± 10 years (completers: 7 ± 8 years, refusals 11 ± 11 years, non-completers 9 ±10 years)	NA

continued

TABLE 28 *Patient characteristics: non-RCTs (cont'd)*

Study	Methods for diagnosis of disorder	Age	Gender (Male/female)	Ethnicity	Education/ socio-economic background	Patient history	Baseline comparability
Osgood-Hynes, 1998[91]	Clinician-administered structured clinical interview for DSM-IV criteria for major depression and/or dysthymia/; HAM-D score	42 ± 13	12/29	NR	18 (44%) were married or cohabiting, 14 (34%) had never been married, eight (20%) were divorced and one (2%) was widowed	Major depression, single or recurrent 25 (61%), dysthymia 11 (27%), double depression (both major depression and dysthymia) five (12%). Mean time since onset of first episode of depression 5 years (range <1–22 years). More patients were diagnosed with dysthymia in London than in Boston or Madison. London patients were significantly younger. 17 (42%) had previously had psychotherapy for depression, 13 (32%) said depression could be due to death of someone they knew	NA
Whitfield, unpublished sponsor submission, 2004[93]	Screening appointment with brief risk assessment	38.1 ± 13.07	13/9	NR	12 (57%) employed, seven (33%) students and three (14%) unemployed	NR	NA
Depression/anxiety: others							
Yates, unpublished, 1996[100]	GP's clinical judgement	Balance 44.5, WLC 42.5, (SDs NR)	Balance: 10/10; control: 14/6	NR	Balance: 25% in full- or part-time employment; six single, nine married, four divorced/separated, one widowed WLC: 25% in full- or part-time employment; seven single, six married, six divorced/separated, one widowed	NR	No significant differences in any characteristics measured

continued

TABLE 28 *Patient characteristics: non-RCTs (cont'd)*

Study	Methods for diagnosis of disorder	Age	Gender (Male/female)	Ethnicity	Education/ socio-economic background	Patient history	Baseline comparability
Phobia/panic: included studies							
Kenwright, 2001[85]	NR	FF 38; clinician 40 (SDs NR)	FF 19/35; clinician 15/16	NR	NR	FF: 14 agoraphobia, social phobia *n* = 9, specific phobias *n* = 8, GAD plus panic *n* = 1, mean problem duration: 22 years Clinician: agoraphobia *n* = 12, social phobia *n* = 11, specific phobias *n* = 8, mean problem duration 29 years	FF group was comparably severe on six measures to clinician group, but significantly less severe on FQ agoraphobia and global phobia, main goal and WSA social and private leisure
Kenwright, 2004[86]	Interview checklist of ICD-10 diagnostic criteria	Internet FF 37; clinic FF 36 (SDs NR)	Internet FF group: 6/4; clinic FF 9/8	NR	Internet FF group: five in full-time employment; clinic FF group: 13 employed full time	Internet FF: agoraphobia with panic *n* = 6, social phobia *n* = 3, insect phobia and claustrophobia *n* = 1; five had co-morbid condition (depression *n* = 3, GAD *n* = 2) Clinic FF: specific phobia *n* = 7, agoraphobia with panic *n* = 5, social phobia *n* = 4, panic with GAD *n* = 1, seven had a co-morbid condition (depression *n* = 2, social phobia *n* = 2, GAD *n* = 2, OCD *n* = 1)	NR

NA, not applicable.

TABLE 29 *Outcomes and analysis information: RCTs*

Study	Outcomes	Instruments	Measurement periods	ITT analysis
Depression/anxiety: included packages				
Proudfoot, 2004[87]	Depression, anxiety, work and social adjustment, and satisfaction with treatment	BDI, BAI, WSA, ASQ (including a composite index for negative situations and a composite score for positive situations)	Pre- and post-treatment and 1-, 3- and 6-month follow-up	Yes, but pretreatment values only reported for 127/146 BtB patients and 114/128 TAU patients
Depression/anxiety: others				
Christensen, 2004[95]	Preference for treatment, depression symptom change, depression literacy	CESDP, ATQ, ad hoc questionnaires to elicit participants' preference and medical, psychological, lifestyle and CBT literacy	Pre- and post-treatment	Yes
Clarke, 2002[97]	Depression	CESDP	Baseline and 4-, 8-, 16- and 32-week follow-up	Yes
Phobia/panic: included studies				
Marks, 2004[88]	Primary outcome measures: assessor and self-ratings of main problem and goals, global phobia item of FQ; time spent with clinician; secondary measures: WSA; patient satisfaction, patient-rated motivation to do self-help	Main problems and goals, global phobia item of FQ, WSA	Pre- and post-treatment and 1- and 3-month follow-up	Yes, but of the 93 patients randomised only 90 were included in the analysis
Schneider, 2005[90]	Primary outcome measures: assessor and self-ratings of main problem and goals, global phobia item of FQ and global impression; secondary measures WSA and patient satisfaction	Main problem and goals, global phobia item of FQ, global impression, WSA	Pretreatment (week 0), post-treatment (week 10) and 1-month follow-up (week 14)	Yes, but of 45 randomised to FF only 33 completed, and of 23 randomised to MA only 15 completed and were included in the analysis
Phobia/panic: other studies				
Carlbring, 2001[92]	Anxiety levels and panic attacks	BSQ, ACQ, MI, BAI, BDI, QOLI panic diary, TCS	Pre- and post-treatment.	Yes
Carlbring, 2003[94]	Anxiety levels and panic attacks	BSQ, ACQ, MI, BAI, BDI, QOLI, TCS	Pre- and post-treatment	Yes

continued

TABLE 29 *Outcomes and analysis information: RCTs (cont'd)*

Study	Outcomes	Instruments	Measurement periods	ITT analysis
Carlbring, 2004[96]	Anxiety levels and panic attacks	BSQ, ACQ, MI, BAI, BDI, QOLI, MADRS-SR, TCS	Pre- and post-treatment and 12-month follow-up	Yes, post-treatment data were collected from all dropouts. For those six participants who did not return their 1-year follow-up questionnaires, their post-treatment scores were carried forward
Fraser, 2001[98]	Improvement in phobias	BAT, SUDS, SPQ, FQ, PT, WARS, HWQ	Pre- and post-treatment and follow-up	No
Gilroy, 2000,[107] Gilroy, 2003[99]	Improvement in phobia	BAT, SUDS, SQ, FQ, PT, WARS; TH and TA measured by an analogue scale between 1 and 7. Ad hoc measure developed only for these studies	Pre- and post-treatment and 3- and 33-month follow-up	No
Heading, 2001[101]	Improvement in phobia	BAT, SUDS, SQ, FQ, PT, WARS, TCS, TH and TA	Pre- and post-treatment and follow-up	No

[Commercial-in-confidence information has been removed.]
HWQ, Homework Questionnaire; TA, treatment acceptability; TCS, Treatment Credibility Scale; TH, treatment helpfulness.

TABLE 30 *Outcomes and analysis information: non-RCTs*

Study	Outcomes	Instruments	Measurement periods	ITT analysis
Depression/anxiety: included packages				
Cavanagh, unpublished sponsor submission, 2004[84]	Improvement in depression and anxiety	CORE-OM, WSA and weekly single-item measures of anxiety and depression	Pre- and post-treatment and 6-month follow-up	No
Marks, 2003[89]	Reduction in symptoms	BDI, HRSD, WSA, BAI	Pre- and post-treatment	No
Osgood-Hynes, 1998[91]	Depression and WSA scores	HAM-D, PGI of improvement (computer administered), WSA	Baseline, 4, 8 and 12 weeks for computer-administered measures. PGI and HAM-D were also given at weeks 1 and 2	Yes
Whitfield, unpublished sponsor submission, 2004[93]	Depression, anxiety, hopelessness, social adaptation, satisfaction and subjective knowledge	BDI-II, BAI, BHS, SASS	BDI-II before first five sessions and after sixth session; subjective knowledge at weeks 1 and 6, and BAI, BHS and SASS at weeks 1, 6 and 3-month follow-up	Stated to be ITT, but last data point carried forward for dropouts ($n = 6$)
Depression/anxiety: others				
Yates, unpublished 1996[100]	Depression and anxiety improvement	HADS, GHQ-12, CRI	Pre- and post-treatment	No
Phobia/panic: included studies				
Kenwright, 2001[85]	Clinician time, reduction in phobia and panic	FQ, WSA, main phobic trigger and main goal	Pre- and post-treatment	Yes, dropouts were regarded as unimproved in the analysis
Kenwright, 2004[86]	Phobia/panic and satisfaction	FQ, WSA	Pre- and post-treatment and 1 month follow-up	No

PGI, patients global impression.

TABLE 31 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning: RCTs*

Study	Results					Other outcome information
Depression/anxiety: included packages						
Proudfoot, 2004[87]	**BDI, BAI, WSA, CoNeg and CoPos, pre- and post-treatment and follow-up (mean ± SD)**					Linear mixed effects models were used to determine the relationship of response to other variables. Efficacy was unaffected by age, gender, concomitant drug treatment or duration of pre-existing illness. Severity of illness had an effect on anxiety and positive attributional style, so that only more severely ill patients benefited from BtB compared with TAU on this measure
		Pre	*Post*	*3 months*	*5 months*	*8 months*
	BDI					
	BtB	24.9 ± 10.8	12.1 ±9.3	12.1 ± 10.3	9.6 ± 8.2	9.3 ± 8.5
	n	127	95	93	83	94
	TAU	24.7 ± 9.2	18.4 ± 10.9	16.4 ± 11	13.5 ± 10.3	14.9 ± 11.3
	n	114	100	85	81	92
	BAI					
	BtB	18.3 ± 10.2	10.9 ± 8.4	10.3 ± 8.7	9.6 ± 9.0	8.9 ± 8.3
	n	123	99	93	84	91
	TAU	19.4 ± 9.3	14.4 ± 10	12.4 ± 10.1	10.4 ± 7.9	10.9 ± 9
	n	107	98	85	80	91
	WSA					
	BtB	18.4 ± 9.2	11.2 ± 7.6	10.5 ± 8.5	9.1 ± 7.7	7.9 ± 7.8
	n	130	105	99	95	103
	TAU	19.1 ± 8.3	14.6 ± 8.5	14.0 ± 9.5	11.5 ± 8.5	11.8 ± 10
	n	112	103	86	85	94
	CoNeg					
	BtB	87.4 ± 13.7	73.8 ± 17.6	73.2 ± 17	74.9 ± 16.6	74.6 ± 17.2
	n	118	96	91	86	93
	TAU	86.0 ± 15.9	85.9 ± 15	83.5 ± 16.9	83.4 ± 15.7	84.6 ± 17.5
	n	107	96	80	79	86
	CoPos					
	BtB	83.8 ± 12.4	90.3 ± 15.4	84.5 ± 11.9	89.6 ± 16	84.6 ± 14.9
	n	114	97	93	87	92
	TAU	84.9 ± 14.2	85.7 ± 14.1	81.4 ± 12.7	85.0 ± 15	80.1 ± 16.1
	n	101	92	78	82	89

continued

TABLE 31 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning: RCTs (cont'd)*

Study	Results	Other outcome information
	Summary measure results (means for available postrandomisation values for each participant)	

	BtB	*TAU*
Outcome BDI	11.6 ± 9.6	16.2 ± 10.1
n	112	109
$t = 3.50$, df = 219, $p = 0.0006$, CI 2.01 to 7.22		
Outcome BAI	10.6 ± 8.4	12.8 ±9.1
n	115	110
$t = 1.87$, df = 223, $p = 0.06$, CI –0.12 to 4.47		
Outcome WSA	10.0 ± 7.8	13.4 ± 8.6
n	115	110
$t = 3.10$, df = 223, $p = 0.002$, CI 1.23 to 5.55		
Outcome CoNeg	73.7 ± 15.3	84.1 ± 13.6
n	106	106
$t = 5.2$, df = 210, $p < 0.001$, CI 6.5 to 14.36		
Outcome CoPos	87.6 ± 13.5	82.8 ±12.5
n	108	106
$t = -2.7$, df = 212, $p < 0.008$, CI –8.30 to –1.28		

Depression/anxiety: others

Christensen, 2004[95]

Improvement in symptoms and literacy after 6 weeks; mean ± SD score, difference (95% CI)

	Blue Pages	*MoodGym*	*Control*
CESDP	3.9 ± 9.1	4.2 ± 9.1	1.0 ± 8.4
ATQ	6.4 ± 18.1	9.3 ± 16.9	3.1 ± 15.8
Medical literacy	–0.6 ± 0.7	–0.1 ± 0.5	–0.1 ± 0.5
Psychological literacy	–0.7 ± 1.1	–0.5 ± 1.0	–0.0 ± 0.9
Lifestyle literacy	0.6 ± 0.9	–0.0 ± 0.5	0.1 ± 0.8
CBT literacy	–1.1 ± 2.0	–2.0 ± 2.4	0.1 ± 1.6

Note: the table shows results by ITT. The authors also provide comparable tables for completers only and completers scoring ≥ 16 on the CESDP, but these are not shown here. Preference for intervention or incompatibility between preference and allocation was not a predictor of change on the CESDP.

Pre–post ESs for CESDP were 0.4, 0.4 and 0.1 for the MoodGym, Blue Pages and control groups, respectively, in the ITT analysis. For completers the ESs were 0.6, 0.5 and 0.1, and for completers with CESD scores of ≥ 16 the ESs were 0.9, 0.75 and 0.25

continued

TABLE 31 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning: RCTs (cont'd)*

Study	Results	Other outcome information

	Blue Pages vs MoodGym	*MoodGym vs Control*	*Blue pages vs Control*
CESDP	–0.3 (–2.6 to 2.0)	3.2* (0.9 to 5.4	2.9* (0.6 to 5.2)
ATQ	–2.8 (–7.2 to 1.5)	6.1* (1.9 to 10.4)	3.3 (–1.1 to 7.7)
Medical literacy	–0.5* (–0.7 to –0.4)	0.0 (–0.1 to 0.2)	–0.5* (–0.6 to 0.3)
Psychological literacy	–0.3* (–0.5 to –0.0)	–0.4* (–0.7 to –0.2)	–0.7* (–1.0 to –0.4)
Lifestyle literacy	–0.5* (–0.7 to –0.4)	0.1 (–0.3 to 0.0)	–0.7* (–0.9 to –0.5)
CBT literacy	0.9* (0.4 to 1.4)	–2.1* (–2.6 to –1.6)	–1.2* (–1.7, to –0.7)

All results remained significant with adjustment using Bonferroni correction. *The mean difference was significant (n <0.05). In the ITT condition, the percentage of clinical cases (CESDP >16) was 50% (Blue Pages), 54% (MoodGym) and 61% (control) at postintervention, representing a drop of 20%, 25% and 8%, respectively, from caseness levels before intervention.

Clarke, 2002[97]

Self-reported depression outcomes (CESDP) for total sample and subsamples (mean ± SD)

	Baseline	*8 weeks*	*16 weeks*	*32 weeks*	*Significance*
Total sample					
CCBT (n = 144)	30.5 ± 12.3	22.4 ± 11.4	21.7 ± 13.3	21.3 ± 13.1	0.86
Control (n = 155)	31.2 ± 11.7	22.4 ± 13.5	22.7 ± 12.6	23.0 ± 14.0	
Depressed cases					
CCBT (n = 107)	30.7 ± 12.9	23.7 ± 11.9	23.0 ± 13.5	22.2 ±12.8	0.12*
Control (n = 116)	31.3 ± 11.5	23.7 ± 14.0	23.2 ± 12.8	25.5 ± 14.2	
Non-depressed cases					
CCBT (n = 37)	30.0 ± 10.6	18.6 ± 8.7	17.8 ± 12.3	18.6 ±13.9	
Control (n = 39)	30.7 ± 12.4	19.1 ± 11.9	21.0 ± 12.0	16.0 ± 10.8	

*p-Value for the interaction term of gender × treatment group × time (test of whether the effect of treatment on CESDP score change differed by gender).

The authors also provided separate analyses by high and low baseline CES-D score, gender and age group, but none of these was significant

continued

TABLE 31 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning: RCTs (cont'd)*

Study	Results				Other outcome information
Phobia/panic: included studies					
Marks, 2004[88]	**Outcome ratings, pre- and post-treatment (mean ± SD)**				3-month follow-up: 52 patients had no other treatment after 1-month follow-up, 3-month follow-up ratings were received from 34 (38% of the original) (11 FF, 19 C, 4 R), on repeated measures analyses, FF and clinician improved significantly and similarly from pretreatment to 3-month follow-up on all measures (all p <0.001) Clinician time: mean total therapist contact time per patient (minutes): FF 76 ± 43, clinician 283 ± 118, relaxation 76 ± 22 (p <0.001) Dropouts: more FF patients dropped out than clinician patients (43% vs 24%) (C, Clinician; R, relaxation)
		Pre	*Post*	*Improvement*	*ES*	
	FF (n = 20) self-rated					
	Main problem	7.4 ± 0.8	3.9 ± 2.0	47.4 ± 25.7	4.3	
	Goals	7.1 ± 1.1	2.9 ± 1.6	57.6 ± 2.5	3.8	
	FQ global phobia	6.1 ± 1.3	3.8 ± 2.3	37.1 ± 33.7	1.7	
	WSA total	15.5 ± 7.7	10 ± 10.5	45.1 ± 45.3	0.7	
	FF blind assessor					
	Main problem	NR	3.1 ± 1.5	NR	NR	
	Goals	NR	2.9 ± 1.9	NR	NR	
	FQ global phobia	5.4 ± 1.1	3.1 ± 1.2	42.8 ± 19.2	2.1	
	WSA total	14.6 ± 5.9	7.2 ± 5.8	52.8 ± 24.9	1.2	
	Clinician (n = 29) self-rated					
	Main problem	7.3 ± 1.0	3.6 ± 1.3	50.1 ± 21.4	3.7	
	Goals	7.0 ± 1.2	3.1 ± 1.7	55.0 ± 25.3	5.7	
	FQ global phobia	6.7 ± 1.2	3.3 ± 1.8	49.2 ± 27.9	2.8	
	WSA total	17.6 ± 8.5	11.8 ± 8.2	30.4 ± 37.6	0.7	
	Clinician, blind assessor					
	Main problem	NR	3.6 ± 1.3	NR	NR	
	Goals	NR	3.1 ± 1.7	NR	NR	
	FQ global phobia	5.7 ± 1.3	3.2 ± 1.3	41.7 ± 20.1	1.9	
	WSA total	17.5 ± 8.3	10.0 ± 7.1	46.7 ± 24.2	0.9	
	Relaxation (n = 16) Self rated					
	Main problem	7.1 ± 1.0	6.4 ± 1.4	10.2 ± 16.4	0.7	
	Goals	7.1 ± 1.2	6.7 ± 1.6	7.4 ± 9.4	0.3	
	FQ global phobia	6.6 ± 1.3	5.7 ± 1.9	13.5 ± 23.1	0.7	
	WSA total	15.4 ± 8.4	11.9 ± 7.7	16.9 ± 35.4	0.4	
	Relaxation, blind assessor					
	Main problem	NR	5.8 ± 1.1	NR	NR	
	Goals	NR	6.8 ± 1.1	NR	NR	
	FQ global phobia	5.6 ± 1.2	5.3 ± 1,3	5.8 ± 17.3	0.2	
	WSA total	15.9 ± 7.8	15.3 ± 7.1	−1.0 ± 33	0.1	

continued

TABLE 31 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning: RCTs (cont'd)*

Study	Results					Other outcome information
Schneider, 2005[90]	**Outcome ratings at weeks 0, 10 and 14 (mean ± SD)**					All three major phobia types improved significantly ($p < 0.01$), with a trend for agoraphobics to improve significantly more than specific phobics. Comparisons made with outcomes from other FF trials (Kenwright,[86] Marks,[88,89]) improvements similar in FF groups
		Week 0	*Week 10*	*Week 14*	Week 0–14 *difference*	Week 0–14 *ES*	
	FF self-reported						
	Main problem	7.0 ± 1.2	4.7 ± 2.0	4.1 ± 2.1	2.9*** (2.1 to 3.6)	2.4	
	Main goal	7.0 ± 1.2	4.5 ± 2.4	4.2 ± 2.2	2.9*** (2.0 to 3.8)	2.4	
	FQ global phobia	6.3 ± 1.4					
	FQ main phobia	7.6 ± 0.7	5.0 ± 2.4	4.1 ± 2.2	3.6*** (2.8 to 4.4)	5.1	
	FQ total phobia	48 ± 34	35 ± 26	29 ± 25	17.5*** (9.0 to 26.1)	0.5	
	FQ anxiety/depression						
	Total	26 ± 12	15 ± 11	11 ± 10	15.1*** (11.2 to 19.1)	1.2	
	WSA total	23 ± 11	15 ± 10	12 ± 9.8	9.9*** (7.0 to 12.9)	0.9	
	FF assessor						
	Main problem	6.0 ± 1.4	4.0 ± 2.1	3.6 ± 2.1	2.3*** (1.7 to 3.0)	1.6	
	Main goal	7.6 ± 0.9	4.5 ± 2.8	4.3 ± 2.8	3.3*** (2.2 to 4.4)	3.7	
	FQ global phobia	6.0 ± 1.4	4.0 ± 2.1	3.5 ± 2.1	2.0*** (1.4 to 2.5)	1.7	
	Global impression	1.7 ± 2.0	1.6 ± 1.1				
	Work/social total	17 ± 9.2	11.2 ± 9.0	11.0 ± 9.7	6.4*** (3.5 to 9.2)	0.7	
	MA self-reported						
	Main problem	7.2 ± 1.4	4.9 ± 2.0	4.9 ± 1.7	2.2*** (1.4 to 2.9)	1.6	
	Main goal	7.3 ± 1.6	4.8 ± 2.0	4.5 ± 1.9	3.0*** (1.9 to 4.1)	1.9	
	FQ global phobia	6.3 ± 1.5					
	FQ main phobia	7.6 ± 0.7	5.2 ± 2.5	4.2 ± 2.2	3/6** (1.7 to 5.4)	5.1	
	FQ total phobia	59 ± 29	40 ± 22	45 ± 25	18.2** (6.8 to 29.5)	0.5	
	FQ anxiety/depression						
	Total	28 ± 11	20 ± 12	21 ± 12	6.8† (–0.7 to 14.4)	0.7	
	WSA total	21 ± 20	12 ± 9.1	15 ± 11	6.3** (1.9 to 10.7)	0.6	
	MA assessor						
	Main problem	6.9 ± 1.0	4.9 ± 1.9	5.4 ± 2.2	1.5** (0.5 to 2.5)	1.5	
	Main goal	7.7 ± 0.7	5.0 ± 2.5	5.7 ± 2.5	1.9** (0.6 to 3.3)	2.7	
	FQ global phobia	6.9 ± 1.0	4.9 ± 1.9	5.3 ± 2.2	1.6** (0.6 to 2.6)	1.6	
	Global impression		2.3 ± 1.0	2.1 ± 1.1			
	Work/social total	20 ± 8.4	14 ± 9.8	14 ± 10	5.2** (1.6 to 8.9)	0.6	
	Difference: mean (95% CI): ES: pretreatment mean – post-treatment mean/pretreatment SD, ***$p < 0.001$, **$p < 0.01$, †$p < 0.1$.						

continued

TABLE 31 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning: RCTs (cont'd)*

Study	Results				Other outcome information
Phobia/panic: other studies					
Carlbring, 2001[92]	**Panic diary for the treatment (CCBT) and WLC groups (mean ± SD)**				The mean score for TCS was 42.6 ± 5.6 (maximum 50, range 27–50), therefore overall rating of treatment credibility was high, although not correlated with any outcome measure or dropping out of the study
		CCBT	*WLC*	*Interaction* $F_{1,39}$	
	Daily anxiety				
	Pre	30.85 ± 15.8	28.56 ± 15.3	14.85***	
	Post	15.91 ± 13.7	28.18 ± 14.1		
	Full-blown panic attacks per week: frequency				
	Pre	2.19 ± 4.05	2.25 ± 2.8	4.58*	
	Post	0.43 ± 1.08	2.33 ± 3.34		
	Full-blown panic attacks per week: duration (minutes)				
	Pre	35.7 ± 56.6	44.2 ± 61.5	4.22***	
	Post	3.63 ± 8.9	43.28 ± 73.5		
	Full-blown panic attacks per week: intensity				
	Pre	46.5 ± 31.74	34.68 ± 24.3	9.89**	
	Post	12.69 ± 24.2	32.94 ± 28.6		
	Limited symptom attack per week: frequency				
	Pre	2.7 ± 2.1	4.1 ± 5.8	0.003	
	Post	2.0 ± 3.2	3.4 ± 6.7		
	Limited symptom attack per week: duration (minutes)				
	Pre	49.5 ± 92.3	46.6 ± 60.2	1.6	
	Post	14.5 ± 25.0	39.9 ± 49.5		
	Limited symptom attack per week: intensity				
	Pre	29.12 ± 17.0	30.44 ± 19.3	5.49*	
	Post	19.6 ± 17.1	34.45 ± 23.7		

***$p < 0.001$, **$p < 0.01$, *$p < 0.5$.

continued

TABLE 31 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning: RCTs (cont'd)*

Study	Results	Other outcome information

BSQ, ACQ, MI, BAI, BDI, QOLI and MADRS-SR for the treatment (CCBT) and control (WLC) groups (mean ± SD)

		CCBT	*WLC*	*Interaction* $F_{1,39}$
BSQ	Pre	45.3 ± 7.5	46.4 ± 8.7	
	Post	29.0 ± 10.3	45.1 ± 12.0	34.99***
ACQ	Pre	31.7 ± 6.5	32.9 ± 9.4	
	Post	22.43 ± 6.0	30.9 ± 9.6	16.38***
MI alone	Pre	64.4 ± 23.2	64.0 ± 21.9	
	Post	47.0 ± 17.4	61.4 ± 20.7	12.03**
MI accompanied	Pre	44.4 ± 13.1	46.8 ± 12.7	
	Post	37.0 ± 10.9	44.3 ± 14.6	3.08†
BAI	Pre	19.3 ± 6.2	21.5 ± 10.0	
	Post	9.8 ± 8.4	21.2 ± 10.4	10.97**
BDI	Pre	11.4 ± 3.7	13.1 ± 6.2	
	Post	5.0 ± 3.6	12.1 ± 7.7	12.75***
QOLI	Pre	1.7 ± 1.1	1.4 ± 1.1	
	Post	2.2 ± 1.2	1.3 ± 1.2	9.52**
MADRS-SR	Pre	13.1 ± 4.4	12.8 ± 3.7	
	Post	7.1 ± 4.7	14.1 ± 6.4	17.02***

***$p < 0.001$, **$p < 0.01$, †$p < 0.1$.

Carlbring, 2003[94]

Pooled within ES, main effects and interactions for the panic diary at pre- and post-treatment for the two treatment groups (mean ± SD)

Measure	*Group*	*Pre*	*Post*	ES_w	*Main effect*		*Interaction*
					Time $F_{1,20}$	*Group* $F_{1,20}$	*Time × Group* $F_{1,20}$
Anxiety	CCBT	18.4 ± 15	18.0 ± 16	0.03	0.6	1.7	0.4
	AR	27.4 ± 8.8	23.8 ± 16.9	0.28			
Limited symptom attacks per week							
Frequency	CCBT	1.8 ± 2.3	0.9 ± 1.3	0.53	8.2**	1.5	0.6
	AR	3.5 ± 3.9	1.9 ± 2.9	0.47			
Intensity	CCBT	16.3 ± 23.9	14.5 ± 25.7	0.07	0.3	0.1	0.0
	AR	19.6 ± 17.2	17.8 ± 20.9	0.09			
Duration (minutes)	CCBT	3.8 ± 5.4	5.9 ± 12.2	–0.24	1.0	1.3	2.7
	AR	15.2 ± 22.6	6.7 ± 12.0	0.49			

The TCS score was 34.9 ± 9.5 for the CBT group and 32.6 ± 7.4 for the AR group. Perceived treatment credibility was not correlated with improvement or with dropping out, but was correlated with the change scores on the fear barometer ($r_{22} = 0.463$, $p < 0.05$). The overall ES was 0.42 for the CCBT group and 0.71 for the AR group. An independent samples test showed that the difference did not reach statistical significance ($t_{23} = -1.984$; $p = 0.057$)

continued

TABLE 31 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning: RCTs (cont'd)*

Study	Results	Other outcome information

Measure	*Group*	*Pre*	*Post*	ES_w	*Main effect*		*Interaction*
					Time $F_{1,20}$	*Group* $F_{1,20}$	*Time × Group* $F_{1,20}$
Full-blown panic attacks per week							
Frequency	CCBT	2.3 ± 2.4	1.3 ± 1.6	0.51	7.6*	0.8	0.3
	AR	3.5 ± 3.0	1.9 ± 3.1	0.52			
Intensity	CCBT	31.6 ± 24.2	32.4 ± 24.1	–0.03	3.5†	0.2	4.0†
	AR	41.3 ± 24.2	20.1 ± 24.1	0.88			
Duration (minutes)	CCBT	22.2 ± 40.4	10.4 ± 16.5	0.41	3.6†	0.5	0.7
	AR	12.3 ± 13.7	7.9 ± 9.6	0.38			
Fear barometer	CCBT	84.5 ± 15.6	49.8 ± 33.8	1.40	26.7***	1.7	0.1
	AR	67.6 ± 30.3	37.2 ± 37.0	0.90			

***$p < 0.01$, **$p < 0.01$, *$p < 0.05$, †$p < 0.1$.

Pooled within ES, main effects and interactions for the questionnaires used at pre- and post-treatment for the two treatment groups (mean ± SD)

Measure	*Group*	*Pre*	*Post*	ES_w	*Main effect*		*Interaction*
					Time $F_{1,20}$	*Group* $F_{1,20}$	*Time × Group* $F_{1,20}$
BSQ	CCBT	47.5 ± 13.4	35.7 ± 16.2	0.79	19.2***	0.1	0.0
	AR	49.2 ± 11.5	37.9 ± 12.8	0.93			
ACQ	CCBT	33.3 ± 9.8	25.8 ± 8.3	0.83	20.7***	0.0	0.9
	AR	32.3 ± 7.1	27.4 ± 8.2	0.64			
MI alone	CCBT	71.2 ± 26.9	54.7 ± 26.0	0.62	25.1***	0.7	0.2
	AR	62.6 ± 17.4	49.1 ± 11.2	0.95			
MI accompanied	CCBT	57.5 ± 21.6	45.9 ± 19.1	0.57	19.2***	4.6*	0.3
	AR	43.0 ± 9.3	33.9 ± 5.7	1.20			
BAI	CCBT	19.6 ± 12.4	15.2 ± 13.1	0.34	17.0***	0.3	1.6
	AR	19.2 ± 4.1	11.0 ± 7.6	1.40			
BDI	CCBT	9.2 ± 9.9	8.4 ± 11	0.08	5.7*	0.4	2.8
	AR	13.3 ± 5.1	8.6 ± 3.9	1.05			
QOLIa	CCBT	1.3 ± 1.7	2.0 ± 1.4	0.45	3.9†	1.6	0.2
	AR	2.0 ± 0.9	2.4 ± 1.2	0.38			

***$p < 0.001$, *$p < 0.05$, †$p < 0.1$. A higher value indicates a higher quality of life.

continued

TABLE 31 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning: RCTs (cont'd)*

Study	Results						Other outcome information
Carlbring, 2004[96]	**Cohen's pooled within-group ES_w for the questionnaires used pre- and post-treatment and 1-year follow-up for the two treatment groups (mean ± SD)**						No differences between post-treatment and follow-up. The overall ES was 0.99 for the TCBT group and 0.78 for the CCBT group post-treatment, and 0.93 and 0.80 respectively, at follow-up. At 1-year follow-up 92% in the CCBT group and 88% in the TCBT group no longer met criteria for PD. The TCS did not predict outcome except in two cases. For both the CCBT and TCBT group the TCS did predict, significantly, change scores for the BSQ
	Measure	*Group*	*Pre*	*Post*	*FU*	ES_w	
						Pre to Post / *Pre to FU*	
	BSQ	CCBT	48.7 ± 11.7	31.8 ± 11.6	32.1 ± 11.5	1.45* / 1.43*	
		TCBT	52.6 ± 10.8	31.3 ± 9.1	31.9 ± 10.7	2.14* / 1.92*	
	ACQ	CCBT	34.5 ± 8.6	23.8 ± 9.0	23.0 ± 9.6	1.22* / 1.27*	
		TCBT	34.6 ± 9.3	23.6 ± 7.2	23.1 ± 8.6	1.33* / 1.29*	
	MI alone	CCBT	2.2 ± 0.9	1.7 ± 0.7	1.6 ± 0.7	0.64* / 0.68*	
		TCBT	2.7 ± 0.9	1.9 ± 0.8	2.0 ± 0.9	0.85* / 0.76*	
	MI accompanied	CCBT	1.8 ± 0.5	1.4 ± 0.4	1.5 ± 0.5	0.71* / 0.63*	
		TCBT	2.1 ± 0.8	1.5 ± 0.6	1.5 ± 0.6	0.84* / 0.81*	
	BAI	CCBT	18.7 ± 10.3	10.9 ± 7.1	10.7 ± 7.9	0.90* / 0.88*	
		TCBT	24.5 ± 10.4	12.3 ± 7.7	12.3 ± 10.1	1.35* / 1.18*	
	BDI	CCBT	11.8 ± 7.8	6.6 ± 5.5	6.2 ± 5.4	0.78* / 0.83*	
		TCBT	15.9 ± 9.0	10.2 ± 7.0	8.8 ± 6.7	0.71* / 0.91*	
	MADRS	CCBT	13.4 ± 5.3	8.6 ± 5.7	8.1 ± 5.7	0.87* / 0.97*	
		TCBT	16.0 ± 4.3	10.4 ± 5.6	10.1 ± 6.9	1.15* / 1.05*	
	QOLI	CCBT	1.4 ± 1.7	2.0 ± 1.4	1.9 ± 1.4	–0.37* / –0.31*	
		TCBT	0.9 ± 1.6	1.7 ± 1.5	1.7 ± 1.3	–0.48* / –0.50*	
	Free from panic disorder	CCBT	0%	80%	92%		
		TCBT	0%	67%	88%		
	*All *p*-values <0.025 with one-tailed paired sample *t*-test pre- vs post-treatment or follow-up.						
Fraser, 2001[98]	**Outcome measures for three-session group for pretreatment, post-treatment and follow-up assessments (mean ± SD) and ES**						The authors also provide a table of the means and standard deviations of the types of vicarious exposure behaviours performed during the first, third and last sessions of treatment, and the sum of all sessions for each group
			Pre	*Post*	*FU*	*ES*	
						Pre to Post / *Pre to FU*	
	BAT		4.7 ± 3.7	9.0 ± 5.6	9.8 ± 6.3	1.16 / 1.38	
	SUDS		64.0 ± 29.1	46.0 ± 32.1	33.0 ± 33.0	0.62 / 1.10	
	SPQ		25.1 ± 3.8	23.5 ± 4.6	21.5 ± 5.6	0.42 / 0.95	
	FQ main		7.7 ± 0.8	7.1 ± 1.6	5.9 ± 2.5	0.75 / 2.25	
	FQ global		5.8 ± 2.0	4.7 ± 2.3	3.9 ± 1.9	0.55 / 0.95	
	PT problem		5.5 ± 2.6	4.8 ± 2.0	3.7 ± 1.5	0.27 / 0.70	
	PT total		28.1 ± 3.4	23.1 ± 7.3	19.3 ± 6.1	1.47 / 2.59	
	WARS total		9.5 ± 7.8	6.9 ± 5.7	6.7 ± 7.3	0.33 / 0.36	

continued

TABLE 31 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning: RCTs (cont'd)*

Study	Results	Other outcome information

Outcome measures for six-session group for pretreatment, post-treatment and follow-up assessments (mean ± SD) and ES

	Pre	*Post*	*FU*	*ES*	
				Pre to Post	*Pre to FU*
BAT	5.6 ± 3.4	10.4 ± 5.2	13.7 ± 4.9	1.4	2.38
SUDS	72.0 ± 21.0	48.0 ± 25.0	37.0 ± 19.0	1.10	1.67
SPQ	23.1 ± 5.3	19.6 ± 6.3	17.3 ± 6.6	0.66	1.10
FQ main	8.0 ± 0.1	6.1 ± 2.6	6.1 ± 2.4	2.30	2.30
FQ global	5.1 ± 2.0	4.4 ± 2.0	3.9 ± 2.1	0.35	0.60
PT problem	5.5 ± 1.9	4.2 ± 2.3	2.9 ± 2.0	0.70	1.37
PT total	27.3 ± 5.1	20.5 ± 8.01	18.3 ± 11.8	1.33	1.76
WARS total	11.1 ± 10.9	6.1 ± 10.9	4.1 ± 6.2	0.46	0.64

Note: the authors classified an ES of 0.20–0.49 as being small, 0.50–0.79 as being medium and ≥0.8 as large.

Gilroy, 2000,[107] Gilroy, 2003[99]

BAT, SUDS, SQ and FQ-Main (mean ± SD) and ES

NR

Group	*Phase*	*BAT*	*SUDS*	*SQ*	*FQ main*	*FQ global*
Live	Pre	3.2 ± 2.7	78.3± 12.1	23.3 ± 4.8	7.9 ± 0.3	5.7 ± 2.0
	Post	14.8 ± 3.3	28.1 ± 23.1	14.8 ± 6.0	3.8 ± 2.2	2.8 ± 2.0
	3-month FU	12.6 ± 5.4	28.4 ± 27.6	13.9 ± 7.7	3.6 ± 2.6	3.2 ± 2.4
	33-month FU	14.0 ± 6.8	40.5 ± 25.9	13.7 ± 6.5	4.2 ± 2.7	2.6 ± 1.8
ES	Pre–post	3.9	2.7	1.6	2.6	1.5
	Pre–3-month	2.2	2.3	1.5	2.3	1.1
	Pre–33-month	2.1	1.9	1.7	1.9	1.6
CAVE	Pre	4.4 ± 2.9	62.2 ± 21.1	23.7 ± 4.6	7.7 ± 0.6	5.8 ± 1.2
	Post	10.9 ± 4.7	29.3 ± 20.3	16.5 ± 5.2	5.0 ±2.0	3.6 ± 1.6
	3-month FU	11.3 ± 5.5	26.8 ± 21.6	15.7 ± 6.4	4.2 ± 1.9	3.4 ± 1.6
	33-month FU	10.1 ± 5.4	32.8 ± 21.6	16.7 ± 6.4	4.8 ± 2.6	2.8 ± 1.5
ES	Pre–post	1.7	1.6	1.5	1.8	1.6
	Pre–3-month	1.6	1.7	1.4	2.5	1.7
	Pre–33-month	1.3	1.4	1.3	1.5	2.2
Relax	Pre	2.7 ± 3.0	76.4 ± 19.8	23.5 ± 5.7	7.7 ± 0.6	6.1 ± 1.7
	Post	5.7 ± 5.4	61.2 ± 23.5	21.0 ± 6.8	6.5 ± 1.5	5.3 ± 2.1
	3-month FU	4.36 ± 4.6	51.5 ± 30.4	18.4 ± 7.6	5.6 ± 2.4	4.2 ± 2.2
	33-month FU[a]			19.4 ± 8.6	6.0 ± 2.7	4.3 ± 2.4
ES	Pre–post	0.7	0.7	0.4	1.1	0.4
	Pre–3-month	0.4	1.0	0.7	1.2	1.1
	Pre–33-month			0.6	0.9	0.9

continued

TABLE 31 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning: RCTs (cont'd)*

Study	Results	Other outcome information

FQ-Global, Phobic Problem, PT Total, WARS Total (mean ± SD) and ES

Group	*Phase*	*Phobic problem*	*PT total*	*WARS total*	*Helpfulness*	*Acceptance*
Live	Pre	5.9 ± 1.9	26.6 ± 4.9	7.7 ± 4.3		
	Post	2.3 ± 1.5	11.8 ± 8.3	3.2 ± 2.9	6.4 ± 1.1	6.4 ± 1.1
	3-month FU	3.1 ± 2.5	11.5 ± 9.8	1.6 ± 3.0	6.5 ± 1.4	6.3 ± 1.0
	33-month FU	1.9 ± 2.3	11.3 ± 10.7	4.3 ± 5.0	5.0 ± 1.8	5.7 ± 1.7
ES	Pre–post	2.3	2.2	1.2		
	Pre–3-month	1.3	2.0	1.7		
	Pre–33-month	2.0	1.8	0.7		
CAVE	Pre	6.0 ± 1.8	28.6 ± 3.8	8.9 ± 5.6		
	Post	3.4 ± 1.2	15.2 ± 6.5	4.0 ± 3.5	4.8 ± 1.7	5.1 ± 1.7
	3-month FU	3.8 ± 2.0	14.5 ± 8.6	3.0 ± 5.4	5.0 ± 1.8	5.1 ± 1.8
	33-month FU	2.2 ± 1.9	13.5 ± 7.4	3.7 ± 4.5	4.8 ± 1.7	4.9 ± 1.7
ES	Pre–post	1.7	2.5	1.1		
	Pre–3-month	1.2	2.1	1.1		
	Pre–33-month	2.1	2.6	1.0		
Relax	Pre	5.8 ± 2.0	30.3 ± 1.7	8.4 ± 4.8		
	Post	4.9 ± 2.1	26.1 ± 3.8	7.1 ± 3.1	3.5 ± 1.7	4.7 ± 1.5
	3-month FU	4.5 ± 2.6	22.3 ± 7.6	6.7 ± 7.6	3.8 ± 1.8	4.0 ± 1.9
	33-month FU	4.9 ± 2.7	20.2 ± 9.4	8.1 ± 8.2	3.3 ± 1.7	3.5 ± 1.8
ES	Pre-post	0.4	1.4	0.3		
	Pre–3-month	0.6	1.5	0.3		
	Pre–33-month	0.4	1.5	0.0		

[a] Owing to the number of partial attrition cases in the PMR group at 33-month follow-up, this group was excluded from analyses of BAT and SUDS.

continued

TABLE 31 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning: RCTs (cont'd)*

Study	Results					Other outcome information
Heading, 2001[101]	**Outcome measures for the LGE group for pretreatment, post-treatment and follow-up assessments (mean ± SD) and ES**					TCS scores were higher for the LGE group than the CAVE group, although both treatments were rated as credible
		Pre	*Post*	*FU*	*ES*	
					Pre to Post	*Pre to FU*
	BAT	5.62 ± 3.75	12.69 ± 5.84	14.00 ± 6.11	1.9	2.2
	SUDS	60.60 ± 18.8	30.70 ± 18.1	28.49 ± 12.6	1.6	1.7
	SPQ	23.77 ± 3.63	19.08 ± 4.11	16.62 ± 5.09	1.3	2.0
	FQ main	7.69 ± 0.75	4.69 ± 2.35	4.62 ± 2.21	4.0	4.1
	FQ global	5.15 ± 1.86	3.31 ± 1.44	2.92 ± 1.04	1.0	1.2
	PT problem	5.38 ± 2.02	3.31 ± 1.79	2.54 ± 1.39	1.0	1.4
	PT total	27.00 ± 3.14	16.38 ± 6.14	16.31 ± 5.92	3.4	3.4
	WARS total	8.42 ± 6.65	5.92 ± 5.16	3.42 ± 3.03	0.4	0.8
	Outcome measures for CAVE group for pretreatment, post-treatment and follow-up assessments (mean ± SD) and ES					
		Pre	*Post*	*FU*	*ES*	
					Pre to Post	*Pre to FU*
	BAT	4.23 ± 3.06	7.85 ± 5.61	8.69 ± 5.34	1.2	1.5
	SUDS	62.21 ± 21.2	50.64 ± 27.8	43.21 ± 26.8	0.6	0.9
	SPQ	25.39 ± 5.84	23.85 ± 5.32	22.23 ± 6.49	0.3	0.5
	FQ main	7.38 ± 7.38	6.31 ± 1.89	5.69 ± 2.36	1.1	1.8
	FQ global	5.92 ± 1.26	5.08 ± 2.18	4.31 ± 1.89	0.7	1.3
	PT problem	6.46 ± 1.89	5.15 ± 2.04	4.54 ± 2.26	0.7	1.0
	PT total	26.92 ± 4.03	20.85 ± 9.31	19.23 ± 8.62	1.5	1.9
	WARS total	11.08 ± 4.92	9.23 ± 8.39	7.23 ± 6.94	0.4	0.8
	Outcome measures for waiting list group for pre-treatment, post-treatment and follow-up assessments (mean ± SD) and ES					
		Pre	*Post*	*FU*	*ES*	
					Pre to Post	*Pre to FU*
	BAT	6.38 ± 3.48	6.92 ± 3.84	8.69 ± 6.37	0.2	0.7
	SUDS	68.21 ± 19.3	67.08 ± 23.8	61.64 ± 23.6	0.1	0.3
	SPQ	25.31 ± 2.29	24.00 ± 3.63	23.38 ± 4.53	0.6	0.8
	FQ main	7.31 ± 0.95	7.00 ± 1.08	7.08 ± 0.95	0.3	0.2
	FQ global	4.38 ± 1.61	5.00 ± 1.87	4.77 ± 1.74	–0.4	–0.2
	PT problem	4.69 ± 1.97	4.54 ± 1.51	4.08 ± 2.25	0.1	0.3
	PT total	26.38 ± 5.92	23.62 ± 6.91	21.00 ± 7.83	0.5	0.9
	WARS total	9.69 ± 8.19	8.15 ± 5.96	6.92 ± 6.06	0.2	0.3

[Commercial-in-confidence information has been removed.]
CESDP, Center for Epidemiologic Studies Depression Scale; CoNeg, composite index for negative situations; CoPos, composite index for positive situations; df, degrees of freedom; FU, follow-up.

TABLE 32 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning): non-RCTs*

Study	Results	Other outcome information
Depression/anxiety studies: included packages		
Cavanagh, unpublished sponsor submission, 2004[84]	**CORE-OM (overall CORE-OM item mean) for completer sample, *n*=104** *Mean* / *95% CT* Intake severity[a]: 1.89 (1.77 to 2.01) Post-treatment: 1.28 (1.15 to 1.42) [a] 84% were over the clinical cut-off point. Pre–post analysis drop in overall CORE-OM item mean score of 0.61 points (t_{103} = 9.38, $p < 0.001$, ES = 0.95), analysis of only those over the clinical cut-off at intake had an ES of 1.17. At 6-month follow-up (n = 40) significant drop in scores from pretreatment of 0.65 points (t_{49} = 6.15, $p < 0.001$, ES 1.04) **WSA for completer sample, *n* = 104** *Mean* / *95% CI* Intake severity: 23.14 (21.30 to 24.97) Post-treatment: 18.51 (16.69 to 20.32) Significant drop in WSA mean item score of 4.63 points (t_{103} = 5.53, $p < 0.001$, ES = 0.52). At 6-month follow-up (n = 34), a drop of 8.86 points from pretreatment (t_{33} = 4.69, $p < 0.001$, ES = 0.86).	Self-reported measures of anxiety and depression: significant drop in self-reported depression between sessions 1 and 8 of the programme of 1.85 (t_{103} = 8.50, $p < 0.001$, ES = 0.82) and in self-reported anxiety of 1.83 (t_{103} = 10.02, $p < 0.001$, ES = 0.89)
Marks, 2003[89]	**Self-rated outcomes for Cope (mean ± SD)** *n* / *Pre* / *Post* / *Difference (95% CI)* / *Improvement (%)* / *ES* *Cope* (n = *39)* BDI: 23 / 27.4 ± 9 / 16.2 ± 7.1 / 11.2*** (6.9 to 15.5) / 37.7 (29.4) / 1.2 HRSD: 30 / 16.8 ± 5.2 / 13.3 ± 6.2 / 3.5* (0.9 to 6.1) / 15.2 (41.9) / 0.7 WSA: 38 / 24.0 ± 8.2 / 16.4 ± 8.8 / 7.6*** (4.6 to 10.6) / 20.4 (31.1) / 0.9 Significant mean difference at ***$p < 0.001$, *$p < 0.05$. ES formula: (pretreatment mean post-treatment mean)/pretreatment SD.	

continued

TABLE 32 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning): non-RCTs (cont'd)*

Study	Results	Other outcome information
Osgood-Hynes, 1998[91]	**HAM-D scores (two-tailed dependent sample *t*-test) (mean ± SD)** *n* / *Baseline* / *Week 12* / *p* / *Responders* ITT: 41 / 18.9 ± 6.0 / 11.1 ± 8.2 / 0.001 / 20 (49%) Completers: 28 / 18.3 ±4.6 / 8.8 ± 7.6 / 0.001 / 18 (64%) **PGI scores** *n* / *Week 12* / *Responders* ITT: 41 / 2.5 ±1.3 / 19 (46%) Completers: 28 / 2.1 ±1.2 / 18 (64%) PGI responders had a score of 1 (very much improved) or 2 (much improved) by week 12. **WSA scores** *n* / *Baseline* / *Week 12* / *Change* / *t-Test* / *df* / *p* Total score: 41 / 19.0 ± 7.9 / 10.9 ± 9.1 / 8.1 ± 8.2 / 6.27 / 40 / <0.001 WSA scores improved significantly in each of the five domains (work, home, social leisure, private leisure, family) at 12 weeks from baseline.	Significantly more US patients than UK patients completed the study ($p < 0.02$). US patients improved more. Most calls (68%) were made outside usual office hours. Patients who made the most Cope calls improved the most
Whitfield, unpublished sponsor submission, 2004[93]	**BDI-II, BAI, BHS and SASS outcomes at baseline and after sixth session (mean ± SD)** n^a / *Baseline* / *Sixth session* / *t (df)* / *p* / *95% CI* BDI-II: 15 / 30.00 ± 11.13 / 18.93 ± 10.23 / 6.96 (14) / 0.000 / (7.66 to 14,48) BDI-II: 20 / 28.15 ± 11.41 / 20.00 ± 10.41 / 4.91 (19) / 0.000 / (1.63 to 6.57) BAI: 15 / 21.40 ± 11.67 / 13.73 ± 7.12 / 2.64 (14) / 0.019 / (1.43 to 13,90) BAI: 20 / 20.30 ± 11.23 / 14.55 ± 7.82 / 2.51 (19) / 0.021 / (0.96 to 10.54) BHS: 15 / 10.13 ± 5.30 / 7.20 ± 3.10 / 2.05 (14) / 0.059 / (–0.13 to 6.00) BHS: 20 / 9.25 ± 5.51 / 7.05 ± 3.79 / 2.00 (19) / 0.060 / (–0.11 to 4.51) SASS: 15 / 31.93 ± 9.02 / 35.87 ± 6.71 / –1.82 (14) / 0.090 / (–8.56 to 0.69) SASS: 20 / 32.70 ± 8.64 / 35.65 ± 6.79 / –1.79 (19) / 0.90 / (–6.40 to 0.50) [a] Where $n = 20$, the last known observations were carried forward to apply to later points where the later scores are missing.	Subjective knowledge on all five items regarding depression improved significantly from baseline at session 6. Results at 3-month follow-up show significant reductions from baseline on all measures apart from SASS. However, by this assessment most patients were engaged in one-to-one psychological intervention

continued

TABLE 32 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning): non-RCTs (cont'd)*

Study	Results			Other outcome information
Depression/anxiety studies: others				
Yates, unpublished, 1996[100]	**HADS Anxiety, HADS Depression, GHQ and CRI subscale results (mean ± SD)**			Average length of computer session was 1 hour, modal number of topics chosen was 3, 12 patients had one computer session and eight had two or more (only one person had more than two sessions)
		Balance	*WLC*	
	HADS Anxiety			
	Baseline	13.6 ± 3.8	14.4 ± 3.3	
	Post-treatment	11.2 ± 3.3*	15.6 ± 4.0	
	HADS Depression			
	Baseline	8.5 ± 4.3	10.1 ± 4.0	
	Post-treatment	5.8* ± 2.6*	11.1 ± 5.1	
	GHQ			
	Baseline	19.4 ± 6.6	20.7 ± 9.2	
	Post-treatment	14.0* ± 5.1*	23.0 ± 9.6	
	CRI baseline			
	Logical analysis	9.7 ± 4.3	9.9 ± 5.3	
	Positive appraisal	10.0 ± 4.3	10.1 ± 5.0	
	Seeking support	9.7 ± 3.5	9.3 ± 4.8	
	Problem solving	9.4 ± 4.5	9.3 ± 3.9	
	Alternative rewards	6.6 ± 5.1	8.3 ± 4.6	
	Cognitive avoidance	10.2 ± 4.1	10.2 ± 4.2	
	Acceptance	7.9 ± 5.0	9.3 ± 5.0	
	CRI post-treatment			
	Logical analysis	9.5 ± 4.5	10.4 ± 4.6	
	Positive appraisal	11.8 ± 3.4	8.9 ± 4.9	
	Seeking support	8.4 ± 4.0	9.7 ± 4.3	
	Problem solving	10.6 ± 3.5	9.2 ± 4.8	
	Alternative rewards	8.8 ± 4.7	7.3 ± 3.7	
	Cognitive avoidance	9.4 ± 3.9	9.6 ± 5.0	
	Acceptance	7.1 ± 4.6	9.9 ± 5.7	
	‡$p < 0.05$ for within-group comparison with baseline score.			

continued

TABLE 32 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning): non-RCTs (cont'd)*

Study	Results			Other outcome information
Phobia/panic studies: included packages				
Kenwright, 2001[85]	**Ratings for FQ, WSA, PT and main goal (mean ± SD)**			31 clinician patients spent a mean of 444 minutes with the therapist over eight sessions
		Pre	*Post*	*p (pre–post)*
	FQ total phobia (0–120)			
	FF	35.9 ± 23.7	27.8 ± 22.7	<0.0001
	Clinician	42.8 ± 25.2	31.7 ± 25.9	<0.001
	Main phobic trigger (0–8)			
	FF	6.7 ± 1.3	4.1 ± 1.4	<0.0001
	Clinician	6.8 ± 1.5	4.0 ± 2.2	<0.0001
	Main goal (0–8)			
	FF	5.8 ± 1.4*	2.6 ± 2.2	<0.0001
	Clinician	7.6 ± 0.6	4.3 ± 2.7	<0.0001
	FQ global phobia (0–8)			
	FF	5.0 ± 1.9*	3.3 ± 2.0	<0.0001
	Clinician	6.0 ± 1.0	3.8 ± 2.2	<0.0001
	WSA work (0–8)			
	FF	4.0 ± 2.5	2.8 ± 2.4	<0.0001
	Clinician	4.9 ± 2.7	3.6 ± 2.9	<0.005
	WSA home management (0–8)			
	FF	1.9 ± 2.1	1.1 ± 1.8	<0.0001
	Clinician	2.9 ± 2.7	1.7 ± 2.2	<0.010
	WSA social leisure (0–8)			
	FF	3.5 ± 2.3*	2.0 ± 2.0	<0.0001
	Clinician	5.2 ± 2.7	4.6 ± 6.0	<0.526
	WSA private leisure (0–8)			
	FF	1.7 ± 1.7*	1.0 ± 1.5	<0.0001
	Clinician	3.7 ± 3.0	2.1 ± 2.3	<0.004
	WSA relationships (0–8)			
	FF	2.8 ± 2.2	2.0 ± 2.2	<0.003
	Clinician	3.6 ± 2.7	2.0 ± 2.3	<0.003
	FQ anxiety/depression (0–40)			
	FF	21.9 ± 12.6	14.7 ±12.7	<0.0001
	Clinician	20.8 ± 10.4	14.5 ± 12.5	<0.0001
	*$p < 0.05$ for FF clinician guided.			

continued

TABLE 32 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning): non-RCTs (cont'd)*

Study	Results					Other outcome information
Kenwright, 2004[86]	**Comparison of outcomes (mean ± SD)**					NR
		Pre	*Post*	*FU*	*Change (%) 0–16 weeks*	*ES*
	Internet FF group (n = *10*)					
	FQ global (0–8)	6.0 ± 1.2	3.4 ± 1.3	2.8 ± 1.7	53***	1.5
	FQ total (0–120)	46 ± 27	32 ± 24	35 ± 23	24***	0.4
	FQ depression (0–8)	4.1 ± 1.9	3.2 ± 4.0	2.0 ± 1.5	51**	0.6
	FQ anxiety/depression (0–48)	19.4 ± 6.6	19 ± 4.8	7 ± 4.1	64***	1.8
	WSA total (0–40)	19.1 ± 10	12 ± 7.3	11 ± 10	42***	0.8
	Clinic FF group (n = *17*)					
	FQ global (0–8)	5.4 ± 2.0	3.2 ± 1.8	3.2 ± 1.6	41***	1.5
	FQ total (0–120)	49 ± 27	32 ± 23	33 ± 27	33***	0.6
	FQ depression (0–8)	4.3 ± 2.4	4.3 ± 7.1	2.9 ± 2.1	33**	0.8
	FQ anxiety/depression (0–48)	25.8 ± 13.3	14.1 ± 10	17.5 ± 13.3	32***	0.6
	WSA total (0–40)	17 ± 10	12 ± 10.7	10 ± 10	41*	0.8
	***$p < 0.001$, *$p < 0.05$, change calculated as pretreatment – follow-up mean/pretreatment mean × 100; ES calculated as pretreatment mean- follow-up mean/pretreatment SD.					

TABLE 33 *Patient preferences and conclusions: RCTs*

Study	Patient preference, satisfaction and acceptability of treatment	Conclusions
Depression/anxiety studies: included packages		
Proudfoot, 2004[87]	Satisfaction with treatment stated to be significantly higher among BtB patients than TAU patients, but values NR	BtB was associated with improvement in symptoms without interaction with drug treatment, duration of pre-existing illness or severity of existing illness. However, for anxiety and positive attributional style, treatment interacted with severity so that BtB was only more effective than TAU for more severely ill patients
Depression/anxiety studies: other studies		
Christensen, 2004[95]	Both the MoodGym site and the psychoeducational site were acceptable to participants, implied by low dropout rates. No data presented	Both MoodGym (CCBT) and Blue Pages (psychoeducation) delivered via the Internet were effective in reducing symptoms of depression. However, this was a self-selected population, not necessarily clinically depressed
Clarke, 2002[97]	NR	There was no significant effect for CCBT across the entire sample. There was a modest effect among people reporting low levels of depression at intake. The authors report low usage rates in the CCBT group
Phobia/panic studies: included packages		
Marks, 2004[88]	Post-treatment patients' rating of treatment helpfulness (rating scale 0–8) did not differ significantly between groups, although FF patients tended to be more satisfied than relaxation patients	Both clinician and FF groups improved on most measures but both had significantly more dropouts than relaxation, which was not effective
Schneider, 2005[90]	Self- and assessor-rated satisfaction scales did not differ significantly between FF and MA, satisfaction with treatment was correlated significantly positively with outcome of the main problem at post-treatment ($r = 0.47$, $p = 0.001$) and 1-month follow-up ($r = 0.45$, $p = 0.002$)	Both FF and MA were equally effective post-treatment, but at 1-month follow-up FF was significantly more effective on some measures. None of the patients saw a clinician in person, all communication with a clinician was by telephone
Phobia/panic studies: other studies		
Carlbring, 2001[92]	Most participants considered the CCBT to be personal despite the lack of personal contact. The majority of participants regarded the lack of eye contact helpful. Almost all participants found it an advantage to receive the treatment at home and at a time of their choosing	Participants in the CCBT group showed significant improvement, but those in the WLC group did not
Carlbring, 2003[94]	Participants found the CCBT moderately personal. A number of participants felt 'alone in cyberspace' and felt that they would have benefited from a forum to discuss the treatment and support each other. Such a forum, they felt, would have motivated them in the programme. They felt that the prompts and deadlines helped to avoid procrastination. Almost all mentioned the advantage of being able to receive the treatment at home and at times that suited them	CCBT plus minimal therapist contact via e-mail has a significant medium to large effect. Applied relaxation was somewhat more effective than CCBT

continued

TABLE 33 *Patient preferences and conclusions: RCTs (cont'd)*

Study	Patient preference, satisfaction and acceptability of treatment	Conclusions
Carlbring, 2004[96]	Most participants in both groups were satisfied with the treatments. Almost all participants felt that the pace was too fast. This was especially so in the CCBT group, where only 28% of the modules were finished in time	CCBT plus minimal therapist contact via e-mail was equally effective as traditional CBT. This was still true at 1-year follow-up
Fraser, 2001[98]	NR	There was no significant difference between the three- and six-session groups. Both groups improved across most outcome measures from pre- to post-treatment and follow-up. The study design was flawed in that dropouts were replaced
Gilroy, 2000,[107] Gilroy,2003[99]	There was a significant difference in acceptance and perceived helpfulness between the live exposure and the relaxation group ($p < 0.001$), with live exposure rated more acceptable and helpful	All treatment groups showed a significant improvement from baseline, maintained at 33-month follow-up
Heading, 2001[101]	ANOVA found that the LGE group scored significantly higher than the CAVE group for TH and TA	There were no significant differences between the CAVE and the WLC groups, with the exception of subjective units of distress. LGE was superior to both CAVE and WLC

[Commercial-in-confidence information has been removed.]
ANOVA, analysis of variance.

TABLE 34 *Patient preferences and conclusions: non-RCTs*

Study	Patient preference, satisfaction and acceptability of treatment	Conclusions
Depression/anxiety studies: included packages		
Cavanagh, unpublished sponsor submission, 2004[84]	No information reported. However Appendix 6 of the sponsor submission stated that of 219 participants, 84 (38.4%) gave feedback and stated that their treatment was a positive experience. No information was provided for 61 participants (45%) who completed eight sessions	Non-comparative trial, two outcome measures only, significant improvement on both the CORE-OM and WSA. However, only 84% of patients were within the clinical range on the CORE-OM scale. Only 18% of sample available for 6-month follow-up, but benefits were maintained
Marks, 2003[89]	From the total sample, 70 patients gave information on four questions on satisfaction (rated 0–8, with 0 being very good and 8 very poor): technical aspects of their system: good to moderate (mean ± SD 3.1 ± 1.5); content and structure: good to moderate (2.7 ± 1.4); live support from clinician very good to good (1.6 ± 1.5); clinic as a whole good (2 ± 1.5)	Patients were most satisfied with their live support and the clinic. Balance users did not achieve a clinically meaningful effect size on any measure, whereas Cope users did on most measures. However, both Cope and Balance users had significant improvement post-treatment on all measures
Osgood-Hynes, 1998[91]	A patient satisfaction scale was filled out by the 28 completers. Overall, patients felt comfortable with the system, found it easy to use and found the booklets helpful. 21 (75%) of the 28 felt that Cope had improved the quality of their lives	There was a significant improvement in patients using the Cope system, although there was no comparison group. 68% of calls were made outside office hours
Whitfield, unpublished sponsor submission, 2004[93]	At 6 weeks, 60% rated the treatment useful as 'a lot' and 40% 'a little'. 33% rated their overall experience of using the programme as 'very good' and 67% rated it as 'good'. All 15 respondents said that they would recommend the programme to others. At the end of treatment 80% said that they would prefer a CD-ROM over book treatment	Only 22 of 80 patients on a waiting list who were approached agreed to participate. More females than males did not attend screening. Values for 3-month follow-up were also reported, but many patients had already started therapy with a therapist. The authors report a significant increase in mean BDI-II scores between screening and the first session. Patients showed improvement from baseline
Depression/anxiety studies: other studies		
Yates, unpublished, 1996[100]	Overall response to the programme was positive; 25 of 29 responders (response after each session) (86.2%) said that the programme made them think in a new way about their problem. After the first session 60% said that they would prefer doing the programme on their own as opposed to with a therapist. Three people noted that the programme was a little slow	This programme had only a single session, with the option for more sessions if desired. There was a significant reduction in HADS anxiety and depression scores and GHQ scores from baseline, but no significant improvement in CRI scores
Phobia/panic studies: included packages		
Kenwright, 2001[85]	NR	Before treatment FF cases were less severe than clinician group; both groups improved but FF group spent 86% less time with a clinician than the clinician group; large dropout rate for both groups so follow-up data missing
Kenwright, 2004[86]	Internet users were said to be generally satisfied, although no data were reported. Three of the ten Internet users said that they would have preferred face-to-face guided self-help to Internet-guided self-help	Small study comparing two methods of delivering FF; patients chose their groups. Both groups improved significantly on all measures

Appendix 7

OCD studies

TABLE 35 *Studies included in the review*

Study	Funding	CCBT components (package)	Study type	Patient population
Greist, 2002[115]	Pfizer, Inc., and Healthcare Technology Systems	BT Steps	RCT	OCD patients
Kenwright, 2005[116]	Healthcare Technology Systems	BT Steps	RCT (scheduled support vs on-demand support)	OCD patients (moderately severe)
Greist, 1998[117]	Partial funding from Pfizer, Inc.	BT Steps	Open study, no comparator	OCD patients
Bachofen, 1999[118]	Partial funding from Pfizer, Inc., Swiss National Science Foundation, Japanese Ministry of Education, Daiwa Anglo-Japanese Foundation, Pusan National University	BT Steps	Open study, no comparator	OCD patients

TABLE 36 *Study characteristics: RCTs*

Study	Description of CCBT	Study quality	Co-therapy or medication	Comparator	Sample size
Greist, 2002[115]	BT Steps	Method of randomisation NR; no blinded assessment; no power calculation; loss to follow-up reasons NR	51% had not taken an SRI for at least 2 weeks before prescreening (6 weeks before if taking fluoxetine). The remainder were taking an SRI at or above an adequate minimum stable dose (e.g. 20 mg per day fluoxetine, 50 mg per day sertraline) and had been doing so for >3 months before prescreening	1. Therapy delivered by behaviour therapist 2. Systematic relaxation guided by an audiotape and a manual (control)	BT Steps $n = 74$; behaviour therapist with clinician $n = 69$; relaxation group (control) $n = 75$ Total $n = 218$ randomised, 183 began treatment, 176 had at least one evaluable visit
Kenwright, 2005[116]	BT Steps	Method of randomisation: table of random numbers and opaque envelopes; no blinded assessment; no power calculation; loss to follow-up reasons NR	22 (50%) were on a stable adequate or greater dose of an SRI and had been so for >3 months before screening	BT Steps in both arms, one with scheduled helpline support and the other with on-demand helpline support	48 patients referred, of whom four were unsuitable, therefore 44 randomised: scheduled helpline support $n = 22$; on-demand helpline support $n = 22$, eight dropped out before self-assessment

TABLE 37 *Study characteristics: non-RCTs*

Study	Description of CCBT	Study quality	Co-therapy or medication	Comparator	Sample size
Greist, 1998[117]	BT Steps	No comparator and no mention of allocation to BT Steps; no blinded assessment; no power calculation; loss to follow-up NR; no mention of prognostic factors and no adjustment for confounders; some comparisons were made regarding number of completed sessions	20 subjects were on psychotropic medication, on a stable dose for ≥ 3 months and agreed not to change it while working through BT Steps	None	$n = 40$ (Boston $n = 12$, London $n = 15$, Madison $n = 13$)
Bachofen, 1999[118]	BT Steps	No comparator and no mention of allocation to BT Steps; no blinded assessment; no power calculation; loss to follow-up NR; no mention of prognostic factors; no mention of adjustment for confounders	NR	None	Originally $n = 23$, but two left early for clinician-led therapy when their turn on the waiting list arrived, leaving $n = 21$

TABLE 38 *Therapy details: RCTs*

Study	Recruitment	Number of sessions	Length of sessions	Therapist contact	Professional background of therapist
Greist, 2002[115]	Subjects were recruited via radio, newspaper advertisements and articles, clinicians' current caseloads and referrals from colleagues	1. BT Steps: nine steps (10-week study period, patients progressed at their own pace) 2. Clinician-guided therapy: 11 weekly sessions 3. Relaxation: 1 hour daily over 10-week period	1. BT Steps: mean length of telephone calls 8.6 minutes 2. Clinician-guided therapy: 1 hour (or longer) 3. Relaxation: at least 1 hour daily	All participants met with a clinician for 15 minutes at baseline and at the end of weeks 2, 6 and 10 after starting treatment	Clinicians who had behaviour therapy expertise; background NR
Kenwright, 2005[116]	Referred by GPs or psychiatrists	17 weeks' unlimited access plus brief live helpline support during office hours in either (a) nine therapist-initiated telephone calls (scheduled support) or (b) patient-initiated calls when help was wanted (on-demand support)	Session length not reported. Telephone time for scheduled patients mean 7.5 ± 3.7 calls, mean duration per patient 13 minutes (range 5–35) On-demand patients mean 1.5 ± 2.8 calls	Three patients were screened live, the other 45 by telephone for 45 minutes Scheduled patients: total mean time per patient 76 ± 78 minutes On-demand patients: mean total support time per patient 16 ± 36 minutes	NR; screening by nurse therapist or psychiatrist

TABLE 39 *Therapy details: non-RCTs*

Study	Recruitment	Number of sessions	Length of sessions	Therapist contact	Professional background of therapist
Greist, 1998[117]	Clinicians, patient enquiries and newspaper advertisements	Nine steps, BT Steps was to be used daily	NR	To confirm subjects' disorder diagnosis most had face-to-face interview; other contact NR	NR
Bachofen, 1999[118]	Patients who were placed on a waiting list to receive CBT	Nine steps, BT Steps was to be used daily, system was used for a mean of 67.2 ± 38.3 days	NR	5 minutes before beginning programme. Total mean contact time was 99 ± 50.6 minutes per patient	NR

TABLE 40 *Study site, follow-up and inclusion/exclusion criteria: RCTs*

Study	Study site	Length of follow-up	Numbers lost to follow-up	Reasons for loss to follow-up	Inclusion criteria	Exclusion criteria
Greist, 2002[115]	Eight sites in USA and Canada	14 weeks after treatment and 26 weeks after first screening visit	35 in total (BT Steps 19, clinician-guided group 14, relaxation 9), for those not having at least one evaluable post-week 0 visit	NR	OCD for ≥2 years on the SCID. Score >7 on the YBOCS compulsions subscale	Past Tourette's disorder, schizophrenia, bipolar disorder, psychosis, psychosurgery, current co-morbid primary major depression, serious suicidal thoughts or unstable medical conditions; or in the past 6 months, alcohol or substance abuse or electroconvulsive therapy
Kenwright, 2005[116]	Enrolment via Maudsley Hospital in south-east London and a clinic in west London, UK	17 weeks	Scheduled support group: dropped out before self-assessment $n = 2$, dropped out before self-treatment $n = 1$ On-demand support group: dropped out before self-assessment $n = 6$, dropped out before self-treatment $n = 7$	NR	Primary OCD (DSM-IV criteria) for ≥2 years; no schizophrenia, bipolar disorder or other psychosis, primary major depression, suicidal plans, or alcohol or substance abuse; if already on an SRI, able to remain on a stable dose during the study	NR

TABLE 41 *Study site, follow-up and inclusion/exclusion criteria: non-RCTs*

Study	Study site	Length of follow-up	Numbers lost to follow-up	Reasons for loss to follow-up	Inclusion criteria	Exclusion criteria
Greist, 1998[117]	Boston, MA, USA, Madison, WI, USA, London, UK	12-week trial followed by 22-week extension phase	Five of the 40 did not complete assessment, 15 completed assessment but performed no sessions, three completed assessment and performed one session. A total of 17 (42.5%) completed assessment and performed two or more sessions	NR	YBOCS total score ≥ 16, or YBOCS compulsion score ≥ 8; not severely depressed, no plans for suicide, OCD had preceded any co-morbid major depression by ≥ 1 month, no psychotic or substance use disorder or personality disorder to disrupt compliance	≥ 10 hours therapy for OCD by therapist, psychotic or substance abuse disorder, personality disorder or ≥ 14 on HAM-D
Bachofen, 1999[118]	UK	NR	Two initially, then two more	Two had to leave the study early in the first 3 weeks because their turn on the waiting list to begin clinician-guided therapy arrived	Diagnosis of OCD based on ICD-10 criteria, other inclusion criteria NR	NR

TABLE 42 *Patient characteristics: RCTs*

Study	Methods for diagnosis of disorder	Age, mean ± SD (years)	Gender (male/female)	Ethnicity	Education/socio-economic background	Patient history	Baseline comparability
Greist, 2002[115]	DMS-IV criteria for OCD	39 ± 12 (range 15–80)	58%/42%	93% white	57% college degree, 21% some college education, 14% high school diploma, 6% less than a high-school education	24% had a secondary diagnosis of mental disorder: 9% social phobia, 8% GAD, 6% simple phobia, 2% major depression, 2% dysthymia. Mean HAM-D score 10 ± 8	NR
Kenwright, 2005[116]	DMS-IV criteria for primary OCD	40 (SD NR)	21/23	NR	45% unemployed	Mean OCD duration was 16 ± 13 years; mean YBOCS 26 ± 6.2 (range12–36) mean HAM-D 20 ± 9.3. 28 (64%) had had past behavioural exposure therapy with ritual prevention with a behaviour therapist, and 22 (50%) were on a stable adequate or greater dose of an SRI and had been so for >3 months before screening	Types of rituals were similar for the two groups

TABLE 43 *Patient characteristics: non-RCTs*

Study	Methods for diagnosis of disorder	Age, mean ± SD (years)	Gender (male/female)	Ethnicity	Education/socio-economic background	Patient history	Baseline comparability
Greist, 1998[117]	DSM-III-R criteria	34.9 ± 8.8	21/19	36 (90%) white	30% completed 2–4 years of college	NR	NA
Bachofen, 1999[118]	ICD-10 criteria	31 ± 8.2	13/10	NR	NR	Mean OCD duration 12.0 ± 6.9 years	NA

TABLE 44 *Outcomes and analysis information: RCTs*

Study	Outcomes	Instruments	Measurement periods	ITT analysis
Greist, 2002[115]	1. Improvement in the YBOCS score 2. Improvement by type of ritual (BT Steps group only) 3. Percentage of responders on PGI and CGI of improvement 4. Treatment satisfaction	YBOCS, HAM-D, WSA	Baseline and post treatment	Yes, last rating carried forward for those who dropped out
Kenwright, 2005[116]	OCD rating, improvement in symptoms	YBOCS, HAM-D at pretreatment only, WSA, patient satisfaction–5 items; specially devised, combined anxiety rating for the first two treatment targets (0–8 scale)	Pre- and post-treatment	NR

PGI, patient global impression; CGI, clinician global impression.

TABLE 45 *Outcomes and analysis information: non-RCTs*

Study	Outcomes	Instruments	Measurement periods	ITT analysis
Greist, 1998[117]	Improvement in OCD severity	YBOCS, HAM-D, WSA	Pre- and post-treatment and after 22-week extension phase	No
Bachofen, 1999[118]	Improvements in OCD symptoms	YBOCS, HAM-D, WSA, PGI	Baseline and end of the study	Yes

TABLE 46 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning): RCTs*

Study	Results	Other outcome information
Greist, 2002[115]	**Baseline, end-point and change score for YBOCS, HAM-D and WSAS (mean ± SD) and % responders at end-point on PGI and CGI**	TCBT group improved significantly more than patients in the BT Steps group (t = 2.12, df = 173, p = 0.035). 61% of calls were made outside business hours (09.00–17.00h, Monday to Friday). YBOCS improvement correlated significantly with more calls (mean + SD 22.5 + 71.6; r = 0.28, p = 0.04). Significantly greater loss of evaluable patients in the BT Steps group than in the relaxation group (χ^2 = 4.57, df = 2, p = 0.03)

	YBOCS	*HAM-D*				
	Baseline	*End-point*	*Change*[a]	*Baseline*	*End-point*	*Change*[b]
BT Steps	24.6 ± 4.3	19.0 ± 7.2	5.6 ± 6.6	9.6 ± 7.9	9.6 ± 7.9	0.0 ± 6.8
Clinician	25.2 ± 4.6	17.6 ± 6.2	8.0 ± 6.6	9.8 ± 8.4	7.8 ± 7.6	2.0 ± 9.4
Relaxation	25.8 ± 5.1	24.1 ± 6.7	1.7 ± 4.8	9.7 ± 7.5	10.0 ± 8.2	–0.3 ± 7.0

	WSAS total			*PGI*[d]	*CGI*[e]
	Baseline	*End-point*	*Change*[c]		
BT Steps	20.7 ± 7.9	15.7 ± 8.5	5.0 ± 7.2	38%	38%
Clinician	20.4 ± 7.7	13.6 ± 8.5	6.8 ± 8.3	58%	60%
Relaxation	21.8 ± 7.6	19.8 ± 8.1	2.0 ± 7.7	15%	14%

[a] F = 17.41, p = 0.001; [b] F = 1.53, p = 0.220; [c] F = 5.94, p = 0.003; [d] χ^2 = 24.36, p < 0.001; [e] χ^2 = 28.26, p < 0.001.

Kenwright, 2005[116]	**Pre- and post-BT Steps for YBOCS, Triggers (Treatment Targets) and WSA (scheduled n = 20, on-demand n = 16) (mean ± SD)**	Scheduled support patient had significantly fewer dropout; significantly more scheduled than on-demand patients reported doing at least one homework session (95% vs 57%; χ^2 = 17.31, p = 0.0001)

	Calls	*Pre*	*Post*	*Difference (95% CI)*	*ES*	*p*
YBOCS Total	Scheduled	26.5 ± 5.1	20.2 ± 9.2	6.3 (4.6 to 11.6)	1.2	0.001
	On-demand	24.5 ± 5.9	22.4 ± 6.8	2.1 (–1.8 to 2.4)	0.3	0.36
YBOCS Obsessions	Scheduled	13.8 ± 3.0	10.6 ± 4.5	3.2 (2.2 to 5.6)	1.0	0.001
	On demand	11.3 ± 5.3	11.0 ± 4.1	0.3 (–2.3 to 0.60)	0.0	0.55
YBOCS Compulsions	Scheduled	12.7 ± 2.6	9.6 ± 4.9	3.1 (2.2 to 6.1)	1.1	0.04
	On-demand	13.2 ± 2.9	11.4 ± 4.3	1.8 (0.00 to –2.9)	0.6	0.04
Triggers	Scheduled	13.6 ± 1.7	7.7 ± 4.0	5.9 (5.0 to 8.7)	3.4	0.001
	On-demand	13.9 ± 2.1	9.2 ± 3.9	4.7 (1.3 to 5.5)	2.2	0.001
WSAS	Scheduled	25.6 ± 8.1	23.4 ± 10.6	2.2 (3.9 to 1.9)	0.2	0.06
	On-demand	20.3 ± 9.9	21.1 ± 9.7	–0.8 (–2.2 to 1.2)	0.47	

ES = pretreatment mean-post-treatment mean/pretreatment SD. Difference = pre-post difference mean.

TABLE 47 *Results of reported outcomes (psychological symptoms and interpersonal and social functioning): non-RCTs*

Study	Results	Other outcome information
Greist, 1998[117]	**Psychological measures in all patients (mean ± SD)**	Similar results for the 17 BT Steps completers (those who performed two or more sessions), except that their scores on YBOCS obsession did not improve significantly. Total scores improved significantly more than among those patients who had one or no sessions ($t = 2.98$, df = 38, $p = 0.005$)

	Baseline	*Week 12*	*End-point*
Trigger discomfort	6.9 ± 1.1	3.7 ± 2.5*	3.2 ± 2.4
n	24	18	24
YBOCS	23.6 ± 7.3	22.9 ± 7.6	20.5 ± 7.9*
n	40	30	39
YB for compulsion	12.3 ± 3.7	12.0 ± 3.6	10.4 ± 4.0*
n	40	30	39
YB for obsession	11.3 ± 4.4	10.9 ± 4.7	10.1 ± 4.3*
n	40	30	39
WSA	18.3 ± 6.8	10.3 ± 6.9*	11.4 ± 7.6*
n	38	15	27
HAM-D	11.2 ± 5.2	9.2 ± 4.5	8.6 ± 4.1
n	37	13	21

*$p < 0.008$.

Bachofen, 1999[118]	**Pre- and post-treatment improvement in YBOCS, HAM-D, WSA and PGI (mean ± SD)**								Significant improvement in the total group was due solely to improvement in the ten completers of two or more sessions
	Baseline	*Post*	*Completers*[a]			*ITT*[b]			
			t	df	*p*	*t*	df	*p*	
YBOCS total	25 ± 6.2	20 ± 7.5	3.19	18	0.005	3.12	20	0.005	
Rituals	13 ± 3	10 ± 4.4	3.54	18	0.002	3.43	20	0.003	
Obsessions	11 ± 3.8	10 ± 3.4	1.89	18	0.074	1.88	20	0.075	
HAM-D	22 ± 8.1	17 ± 8.3	2.99	18	0.008	2.93	20	0.008	
WSA total	20 ± 7.3	17 ± 7.6	2.28	18	0.035	2.27	19	0.035	
PGI[c]		2.8 ± 1.0							

[a] $n = 19$, [b] $n = 21$, [c] $n = 8$.

TABLE 48 *Patient preferences and conclusions: RCTs*

Study	Patient preference, satisfaction and acceptability of treatment	Conclusions
Greist, 2002[115]	At end-point, on almost every item, patients were most satisfied with clinician-guided behaviour therapy, next most satisfied with BT Steps, and least satisfied with systematic relaxation. Patients who received clinician-guided behaviour therapy or BT Steps were significantly more satisfied than patients who received relaxation, and patients treated with clinician-guided behaviour therapy tended to be more satisfied than patients who used BT Steps	Clinician-guided behaviour therapy was significantly more effective than BT Steps, although both groups showed improvement. Both clinician-guided behaviour therapy and BT Steps were significantly more effective than systematic relaxation, which was ineffective
Kenwright, 2005[116]	Feeling comfortable in using BT Steps, and preference for BT Steps over a clinician (self-rated on 0–8 scales) were associated significantly with a better outcome on the YBOCS ($t = 2.863$, $p = 0.010$, and $t = 3.334$, $p = 0.003$, respectively)	Scheduled support patients had significantly fewer dropouts, more completers of two or more homework sessions and more improvement on YBOCS total, compulsions and WSA. The authors point out that the difference between the groups is caused by a lack of response in the on-demand group on the YBOCS obsession subscale

TABLE 49 *Patient preferences and conclusions: non-RCTs*

Study	Patient preference, satisfaction and acceptability of treatment	Conclusions
Greist, 1998[117]	24 patients responded to the satisfaction questionnaire; 71% said that BT Steps had improved the quality of their lives. Most reported little or no discomfort or anxiety during calls and indicated that the system allowed them to express their feelings well or extremely well	An open, non-comparative trial of 40 patients enrolled in the study; only 17 completed two or more sessions. These 17 patients had significant improvement
Bachofen, 1999[118]	Not reported; however, Nakagawa *et al.*[119] report that after the patients ($n = 9$) completed clinician-guided care (after BT Steps) they were far more satisfied with clinician-guided care than BT Steps (mean score 3.8 ± 1.5 vs 7.0 ± 0.9; $t = 5.9$, $p < 0.0001$)	An open non-comparative trial of patients on a waiting list for therapy. Of the original 23 patients, 16 (76%) went on to complete self-assessment and this did not reduce symptoms. Ten of the 23 patients went on to use the sessions. This group had significant improvement in symptoms

Appendix 8

Calculated effect sizes

See the section 'Effect sizes' (p. 17) for calculation of effect sizes and note the statement: that greater emphasis should be placed on the confidence intervals surrounding the treatment effect on the original scales of measurement.

TABLE 50

Study	Outcome	Treatment group	*n*	Baseline		Post treatment		Change	Within-group ES	Difference in change scores[a]	Between group ES[a]
				Mean	SD	Mean	SD				
Proudfoot, 2004[87]	BDI	BtB	127	24.9	10.8	12.1	10.3	12.8	1.19	6.50	0.65
		TAU	114	24.7	9.2	18.4	10.9	6.3	0.68		
	BAI	BtB	123	18.3	10.2	10.9	8.4	7.4	0.73	2.40	0.25
		TAU	107	19.4	9.3	14.4	10	5	0.54		
	WSA	BtB	130	18.4	9.2	11.2	7.6	7.2	0.78	2.70	0.31
		TAU	112	19.1	8.3	14.6	8.5	4.5	0.54		
Marks, 2003[89]	BDI	Cope	23	27.4	9.0	16.2	7.1	11.2	1.24		
	HRSD	Cope	30	16.8	5.2	13.3	6.2	3.5	0.67		
	WSA	Cope	38	24.0	8.2	16.4	8.8	7.6	0.93		
Osgood-Hynes, 1998[91]	HAM-D	Cope	41	18.9	6	11.1	8.2	7.8	1.30		
Marks, 2004[88]	Main problem	FF	20	7.4	0.8	3.9	2.0	3.5	4.38	–0.20	–0.22
		TCBT	29	7.3	1.0	3.6	1.3	3.7	3.70		
	Main problem	FF	20	7.4	0.8	3.9	2.0	3.5	4.38	2.80	3.13
		Relaxation	16	7.1	1.0	6.4	1.4	0.7	0.70		
	Goals	FF	20	7.1	1.1	2.9	1.6	4.2	3.82	0.30	0.26
		TCBT	29	7.0	1.2	3.1	1.7	3.9	3.25		
	Goals	FF	20	7.1	1.1	2.9	1.6	4.2	3.82	3.80	3.32
		Relaxation	16	7.1	1.2	6.7	1.6	0.4	0.33		
	Global phobin	FF	20	6.1	1.3	3.8	2.3	2.3	1.77	–1.10	–0.89
		TCBT	29	6.7	1.2	3.3	1.8	3.4	2.83		
		FF	20	6.1	1.3	3.8	2.3	2.3	1.77	1.40	1.08
		Relaxation	16	6.6	1.3	5.7	1.9	0.9	0.69		
	WSA	FF	20	15.5	7.7	10.0	10.5	5.5	0.71	–0.30	–0.04
		TCBT	29	17.6	8.5	11.8	8.2	5.8	0.68		
	WSA	FF	20	15.5	7.7	10.0	10.5	5.5	0.71	2.00	0.25
		Relaxation	16	15.4	8.4	11.9	7.7	3.5	0.42		
Schneider, 2005[90]	Total phobia	FF	45	48	34	35	26	13	0.38	–6.00	–0.19
		MA	23	59	29	40	22	19	0.66		
	WSA	FF	45	23	11	15	10	8	0.73	–1.00	–0.07
		MA	23	21	20	12	9.1	9	0.45		
Kenwright, 2001[85]	FQ total	FF	54	35.9	23.7	27.8	22.7	8.1	0.34	–3.00	–0.12
		TCBT	31	42.8	25.2	31.7	25.9	11.1	0.44		
Kenwright, 2004[86]	FQ total	FF Internet	10	46	27	32	24	14	0.52	–3.00	–0.11
		FF Clinic	17	49	27	32	23	17	0.63		

continued

TABLE 50 *Continued*

Study	Outcome	Treatment group	*n*	Baseline		Post treatment		Change	Within-group ES	Difference in change scores[a]	Between group ES[a]
				Mean	SD	Mean	SD				
Whitfield, 2004[93]	BDI	Overcoming Depression	20	28.15	11.41	20.00	10.41	8.15	0.71		
	BAI	Overcoming Depression	20	20.30	11.23	14.55	7.82	5.75	0.51		
	BHS	Overcoming Depression	20	9.25	5.51	7.05	3.79	2.20	0.40		
	SASS	Overcoming Depression	20	32.70	8.64	35.65	6.79	2.95	0.34		
Carlbring, 2003[94]	BSQ	CCBT	11	47.5	13.4	35.7	16.2	11.8	0.88	0.50	0.04
		Relaxation	11	49.2	11.5	37.9	12.8	11.3	0.98		
	ACQ	CCBT	11	33.3	9.8	25.8	8.3	7.5	0.77	2.60	0.30
		Relaxation	11	32.3	7.1	27.4	8.2	4.9	0.69		
Carlbring, 2004[96]	BSQ	CCBT	25	48.7	11.7	31.8	11.6	16.9	1.44	–4.40	–0.39
		TCBT	24	52.6	10.8	31.3	9.1	21.3	1.97		
	ACQ	CCBT	25	34.5	8.6	23.8	9.0	10.7	1.24	–0.30	–0.03
		TCBT	24	34.6	9.3	23.6	7.2	11.0	1.18		
Clarke, 2002[97]	CESDP	ODIN	107	30.7	12.9	23.7	11.9	7.0	0.54	–0.60	–0.05
		Control	116	31.3	11.5	23.7	14.0	7.6	0.66		
Fraser, 2001[98]	BAT	CCBT three session	15	4.7	3.7	9.0	5.6	4.3	1.16	–0.50	–0.14
		CCBT six session	15	5.6	3.4	10.4	5.2	4.8	–1.41		
	FQ global	CCBT three session	15	5.8	2.0	4.7	2.3	1.1	0.55	0.40	0.20
		CCBT six session	15	5.1	2.0	4.4	2.0	0.7	0.35		
Gilroy, 2003[99]	BAT	CAVE	15	4.4	2.9	10.9	4.7	6.5	2.24	–5.10	–1.82
		TCBT	15	3.2	2.7	14.8	3.3	11.6	4.30		
	BAT	CAVE	15	4.4	2.9	10.9	4.7	6.5	2.24	3.50	1.19
		Relaxation	15	2.7	3	5.7	5.4	3.0	1.00		
	FQ global	CAVE	15	5.8	1.2	3.6	1.6	2.2	1.83	–0.70	–0.42
		TCBT	15	5.7	2.0	2.8	2.0	2.9	1.45		
	FQ global	CAVE	15	5.8	1.2	3.6	1.6	2.2	1.83	1.40	0.95
		Relaxation	15	6.1	1.7	5.3	2.1	0.8	0.47		
Heading, 2001[101]	BAT	CAVE one session	13	4.23	3.06	7.85	5.61	3.62	1.18	–3.45	–1.00
		TCBT one session	14	5.62	3.75	12.69	5.84	7.07	1.89		
	BAT	CAVE one session	13	4.23	3.06	7.85	5.61	3.62	1.18	3.08	0.94
		WLC	13	6.38	3.48	6.92	3.84	0.54	0.16		
	FQ global	CAVE one session	13	5.92	1.26	5.08	2.18	0.84	0.67	–1.00	–0.62
		TCBT one session	14	5.15	1.86	3.31	1.44	1.84	0.99		
	FQ global	CAVE one session	13	5.92	1.26	5.08	2.18	0.84	0.67	1.46	1.01
		WLC	13	4.38	1.61	5.00	1.87	–0.62	–0.39		

continued

TABLE 50 *Continued*

Study	Outcome	Treatment group	*n*	Baseline		Post treatment		Change	Within-group ES	Difference in change scores[a]	Between group ES[a]
				Mean	SD	Mean	SD				
Yates, 1996[100]	HADS-A	Balance	22	13.6	3.8	11.2	3.3	2.4	0.63	3.60	1.01
		WLC	23	14.4	3.3	15.6	4.0	–1.2	–0.36		
	HADS-D	Balance	22	8.5	4.3	10.1	4.0	2.7	0.63	3.70	0.89
		WLC	23	5.8	2.6	11.1	5.1	–1	–0.25		
Greist, 2002[115]	YBOCS	BT Steps	74	24.6	4.3	19.0	7.2	5.6	1.30	–2.00	–0.45
		TCBT	69	25.2	4.6	17.6	6.2	7.6	1.65		
	YBOCS	BT Steps	74	24.6	4.3	19.0	7.2	5.6	1.30	3.90	0.83
		Relaxation	75	25.8	5.1	24.1	6.7	1.7	0.33		
	HAM-D	BT Steps	74	9.6	7.9	9.6	7.9	0	0.00	–2.00	–0.25
		TCBT	69	9.8	8.4	7.8	7.6	2	0.24		
		BT Steps	74	9.6	7.9	9.6	7.9	0	0.00	0.30	0.04
		Relaxation	75	9.7	7.5	10.0	8.2	–0.3	–0.04		
	WSA	BT Steps	74	20.7	7.9	15.7	8.5	5.0	0.63	–1.80	–0.23
		TCBT	69	20.4	7.7	13.6	8.5	6.8	0.88		
	WSA	BT Steps	74	20.7	7.9	15.7	8.5	5.0	0.63	3.00	0.39
		Relaxation	75	21.8	7.6	19.8	8.1	2.0	0.26		
Kenwright, 2005[116]	YBOCS	BT Steps scheduled	20	26.5	5.1	20.2	9.2	6.3	1.24	4.2	0.77
	YBOCS	BT Steps on demand	16	24.5	5.9	22.4	6.8	2.1	0.36		
Greist, 1998[117]	YBOCS	BT Steps	40	23.6	7.3	22.9	7.6	0.7	0.10		
Bachofen, 1999[118]	YBOCS	BT Steps	21	25	6.2	20	7.5	5	0.81		

[a] Where comparator groups exist.
[Commercial-in-confidence information has been removed.]

Appendix 9

Transition matrices

TABLE 51 *Transition matrix for treatment as usual*

Level	Minimal	Mild	Moderate	Severe
Minimal	0.75	0.25	0.00	0.00
Mild	0.375	0.417	0.167	0.042
Moderate	0.220	0.268	0.439	0.073
Severe	0.167	0.083	0.292	0.458

TABLE 52 *Transition matrix for Beating the Blues*

Level	Minimal	Mild	Moderate	Severe
Minimal	1	0.00	0.00	0.00
Mild	0.667	0.296	0.037	0.00
Moderate	0.361	0.500	0.111	0.028
Severe	0.25	0.25	0.25	0.25

Appendix 10

Health state utility values

Search

The search aimed to identify all references relating to the use of generic health-related quality of life instruments [including preference-based measures such as EQ-5D, Health Utility Index (HUI) and SF-6D] and utilities across depression, anxiety and OCD. Population search terms (e.g. depression, anxiety, panic, agoraphobia, phobia, obsessive compulsive disorder) were combined and the methodological search filters used are provided in Appendix 4. Searches were conducted in MEDLINE, EMBASE, NHS EED and OHE HEED specifically to identify economic literature relating to anxiety and depressive disorders. This search was then complemented by handsearching of the available literature for utility or outcome data for depression and the Harvard dataset. A total of 63 articles was found in this area.

Inclusion and exclusion criteria

The systematic review included all preference-based measures and utility values elicited from patients or members of the community. Generic health-related quality of life measures were included to identify opportunities for using the SF-6D on the SF-36 or other means of mapping onto preference-based measures. This review does not include symptom-specific questionnaires unless they were used alongside a generic instrument.

Results of search

After careful sifting of the article abstracts, 12 articles were found to meet the inclusion criteria (*Table 53*). Ten studies present health state values for depression, one presents the results of a review, one SF-36 values for anxiety states, one SF-36 values on OCD and another is a European survey of mental health conditions.

Review

Depression

Ten studies were found reporting health state utility values for depression. These studies used two valuation techniques, time trade-off (TTC) or standard gamble (SG). Different methods of describing the condition were used, including the generic preference-based measures of EQ-5D and HUI[143,144] and bespoke vignettes developed by the researchers[145,146] not suitable for the NICE reference case. Most studies obtained values directly from patients rather than from members of the general public,[147–150] and so would not be suitable for the reference case. Some were obtained from clinicians and nurses.[144,151] Strictly speaking, only one of these studies makes the reference case for the economic model.[45] Nonetheless, these studies do provide clear evidence that depression is associated with significant decrements in health state utility values for a range of methods and that these decrements are associated with the severity of the condition. It is difficult to be sure that these studies are valuing the same level of depression since studies used different methods for classifying the condition. Unfortunately, none was linked to the BDI, the primary outcome in the CCBT studies.

While these studies provide important evidence on the impact of depression, they cannot be used directly in the CCBT models. Instead, it was decided to use a data set from a recently published RCT of supervised self-help CBT in primary care,[54] which incorporated the EQ-5D and Core. This is a suitable source given that the patients were recruited from 17 primary healthcare teams and would be broadly representative of the NHS. It used Core rather than the BDI, but Core is a depression-specific questionnaire that is similar in many ways to the BDI and it has been mapped onto the BDI by the developer of Core (Barkham: personal communication). The mapping function was fitted to these data to provide BDI data on each case.

The Richards study[54] provided data on 62 patients with BDI total scores and EQ-5D data. An initial simple regression model indicated that the relationship between the BDI score and the EQ-5D was not linear, so it was decided simply to estimate mean ± SD scores for three depression categories of mild to moderate, moderate to severe and severe of 0.78 ± 0.20, 0.58 ± 0.31 and 0.38 ± 0.32, respectively. As in the trial, there were no

patients with scores in the minimal category since by definition they would not be suitable for the trial. It was assumed that patients in this minimal category would have age- and gender-matched normal scores for this group of 0.88 ± 0.22.[133]

These scores are comparable to those obtained in other studies on health state values on similar groups of patients. It is difficult to compare these values with other published studies owing to variations in methods. Comparisons are only possible for those studies that produced values for comparable severity categories. Bennett[151] found that mild depression had a mean of 0.59, moderate 0.32 and severe 0.04, and although these are lower they were obtained from clinicians and nurses. Values published by Revicki[145] were 0.73 for mild and 0.63 for moderate, but these were obtained from patients and were based on descriptions that included the side-effects of treatment. Finally, Schaffer[149] produced values of 0.59, 0.51 and 0.39 for mild, moderate and severe depression, respectively, from patients currently with depression. The values for patients in remission varied from 0.86[148] to 0.95[144,146] and 1.0.[144] The range produced from the analysis of the Richards data set of 0.38 to 0.88 seems to lie within these estimates.

Anxiety

No published utility values for anxiety states was found that was relevant for this report. Studies were found with SF-36 data, one by Simon and colleagues[152] of a small number of patients and another from a large European survey, the ESEMeD survey.[153] These were reviewed to assess the potential impact of anxiety states on utility. The Simon study showed a significant impact of anxiety on mental health, social functioning and role emotional dimensions from social anxiety and PD (*Table 54*).

The ESEMeD study was a large-scale survey of mental health disorders across six countries in Europe. It was based on psychiatric assessments of patients over the past 12 months. It showed a significant impact on the mental health summary of the SF-36 across a large number of mental health disorders over the previous 12 months, including specific phobia, social phobia and agoraphobia. The ESEMeD study also collected EQ-5D and the team led by Alonso agreed to conduct some additional analysis of their data to generate EQ-5D and SF-6D utility values across these states and this is presented in *Table 55*. It shows significant decrements associated with these phobias and that these are comparable in magnitude to the impact of physical medical conditions such as arthritis and heart disease.

A key feature of these patients is that they represent people who were found to have these mental disorders over the past 12 months. These comprise a mixed group of patients, some of whom will be experiencing some degree of remission, as well as those in the worst phases of the condition. How these relate to the patients in the trial used to populate the economic model is unclear. Furthermore, it is not clear how much these specific disorders contributed to these quality of life scores. If these patients have been cured of their condition it is not clear that they would have been restored to the value for those with no disorder. Nonetheless, they are the best available data in this condition and have been used in the models presented in this report.

OCD

No published utility values for OCD states were found that were relevant for this report. Studies were found with SF-36 data, one by Koran[154] of a small number of patients and one from the European ESEMeD survey.[153] These were reviewed to assess the potential impact of anxiety states on utility. *Table 56* presents SF-36 scores for OCD patients compared with normative values[154] and they show a significant impact on the mental health, social functioning, role emotional and vitality dimensions.

The ESEMeD survey included OCD as a state and found people diagnosed with this condition had mean EQ-5D scores of 0.72 compared to 0.88 for those without disorder. This is comparable to the panic phobia patients. The OCD group includes patients diagnosed as having OCD in the last 12 months.

The ESEMeD survey also collected YBOCS data in those who complained of obsessive and compulsive symptoms in the filtering questions (i.e. a question to determine whether the respondent needs to answer the full YBOCS). The YBOCS is a self-rated questionnaire that asks people about their obsessive and compulsive symptoms. It generates scores for these two domains and a total score based on a simple summation of them. It was felt that a better approach would be to use the YBOCS since this would enable a more direct linkage to the Greist trial.[115]

There were 2807 cases who were asked the filtering questions regarding OCD. Out of these

TABLE 53 *Depression health state values*

Study	Valuation method	Mean score	Severity	Source of values
Revicki, 1995[147]	SG	0.306	Untreated depression	Patients
Revicki, 1997[148]	SG	0.301	Depressive symptoms	Patients
Hatziandreu, 1994[143]	HUI	0.45	Depression	Community
Kamlet, 1995[144]	SG	0.95	Depression in remission, off drug treatment	Clinicians
	HUI	1.00	Maintenance treatment, non-depressed	Community
Pyne, 2001[155]	QWB	0.538 (0.06)	Responders within 4 weeks among inpatients with major depression	Patients
		0.308 (0.047)	Non-responders within 4 weeks among patients with major depression	Patients
Bennett, 2000[151]	McSad	0.59 (0.55–0.62) 0.32 (0.29–0.34) 0.04 (0.01–0.07)	Mild depression Moderate depression Severe depression	Three psychiatrist nurses and three social workers assessed depression health
Revicki, 1998[145]	SG	0.74 (0.22), $n = 68$ 0.30 (0.28), $n = 58$	Current Severe depression, untreated	Patients (own) Patients (hypothetical status)
		Nefazodone 0.63 (0.23) $n = 70$ Fluoxetine 0.63 (0.19) $n = 68$ Imipramine 0.55 (0.03) $n = 67$	Moderate depression	
		Nefazodone 0.73 (0.21) $n = 70$ Fluoxetine 0.70 (0.20) $n = 70$ Imipramine 0.64 (0.20) $n = 68$	Mild depression	
		Nefazodone 0.73 (0.21) $n = 70$ Fluoxetine 0.70 (0.20) $n = 70$ Imipramine 0.64 (0.20) $n = 68$	Depression remission, maintenance treatment	
		0.86 (0.16). $n = 70$	Remission, no treatment	
Schaffer, 2002[149]	SG	0.59 (0.33) 0.79 (0.28)	Mild depression	Current depressed Past depressed
		0.51 (0.34) 0.67 (0.36)	Moderate depression	Current depressed Past depressed
		0.31 (0.31) 0.47 (0.34)	Severe depression	Current depressed Past depressed
Wells, 1999[150]	TTO	0.67	Patients with major depression and dysthymic disorder	Depressed patients in primary care setting
	SG	0.73	Patients with major depression and dysthymic disorder	Depressed patients in primary care setting

continued

TABLE 53 *Depression health state values (cont'd)*

Study	Valuation method	Mean score	Severity	Source of values
King, 2000[45]	EQ-5D (TTO)	Baseline 0.73 4 months 0.85 12 months 0.85	Moderate depression CBT group	General population
		Baseline 0.73 4 months 0.85 12 months 0.85	Non-directive group	
		Baseline 0.73 4 months 0.81 12 months 0.85	GP group	
Lenert, 2000[146] States created from applying cluster analysis to mental and physical components SF-36 scores in patient population	SG	0.944 (0.027) 0.871 (0.024) 0.829 (0.026) 0.813 (0.027) 0.781 (0.027) 0.656 (0.037)	Near-normal health Mild mental with physical impairment Severe physical health impairment Severe mental health impairment Severe mental and moderate physical impairment Severe mental and physical impairment	Community sample
Lave, 1998[128]	Average of six studies	0.59	Depression symptoms	Patient and community

SG, standard gamble; QWB, Quality of Well-being Scale; TTO, time trade-off.

TABLE 54 *Results for anxiety: SF-36 scores (mean ± SD)*[152]

	Social anxiety disorder (n = 33)	Panic disorder (n = 33)	Norms
Physical functioning	92.9 ± 14.4	79.6 ± 20.9	89.4
Physical role	86.4 ± 23.5	54.9 ± 42.2	86.2
Body pain	80.0 ± 20.3	68.1 ± 24.4	77.8
General health	80.1 ± 19.6	71.1 ± 23.0	75.4
Vitality	59.4 ± 18.5	51.5 ± 21.6	61.2
Social function	65.9 ± 28.5	61.0 ± 25.2	84.5
Emotional role	67.9 ± 42.1	55.5 ± 43.8	82
Mental health	58.5 ± 9.4	47.7 ± 18.6	74

TABLE 55 *Mean EQ-5D and SF-6D scores according to specific 12-month mental disorders and chronic diseases from ESEMeD study*

EQ-5D index				SF-6D (SF-12) index			
	n	**Mean**	**95% CI**		***n***	**Mean**	**95% CI**
Neurological problem[a]	109	0.65	(0.47 to 0.82)	12-month dysthymia	283	0.62	(0.60 to 0.65)
12-month dysthymia	283	0.70	(0.66 to 0.75)	Neurological problema	109	0.67	(0.62 to 0.71)
12-month GAD	225	0.73	(0.68 to 0.78)	12-month GAD	223	0.67	(0.64 to 0.70)
12-month PD	186	0.76	(0.70 to 0.82)	12-month any mood	968	0.67	(0.66 to 0.68)
12-month major depression episode	884	0.77	(0.74 to 0.79)	12-month major depression episode	882	0.67	(0.66 to 0.69)
12-month any mood	969	0.77	(0.75 to 0.79)	12-month panic disorders	186	0.68	(0.65 to 0.71)
Heart disease[a]	541	0.78	(0.74 to 0.82)	12-month PTSD[a]	192	0.68	(0.65 to 0.72)
12-month agoraphobia	86	0.79	(0.73 to 0.84)	12-month agoraphobia	86	0.69	(0.65 to 0.72)
12-month PTSD[a]	191	0.79	(0.74 to 0.84)	12-month social phobia	219	0.69	(0.66 to 0.71)
12-month social phobia	218	0.79	(0.75 to 0.84)	12-month OCD[b]	22	0.72	(0.64 to 0.80)
Arthritis/rheumatism[a]	2068	0.81	(0.79 to 0.82)	12-month any anxiety	1322	0.72	(0.71 to 0.73)
12-month any anxiety	1322	0.81	(0.79 to 0.83)	12-month specific phobia	697	0.74	(0.73 to 0.76)
12-month specific phobia	698	0.82	(0.80 to 0.85)	12-month alcohol dependence	51	0.75	(0.71 to 0.80)
Diabetes[a]	441	0.83	(0.80 to 0.86)	Heart disease[a]	541	0.75	(0.73 to 0.77)
Lung disease[a]	855	0.84	(0.82 to 0.86)	Arthritis/rheumatism[a]	2070	0.77	(0.76 to 0.78)
12-month OCD[b]	22	0.85	(0.72 to 0.97)	Lung disease[a]	855	0.78	(0.77 to 0.80)
12-month alcohol dependence	52	0.88	(0.84 to 0.93)	Diabetes[a]	441	0.79	(0.77 to 0.81)
12-month alcohol abuse	156	0.90	(0.86 to 0.93)	12-month alcohol abuse	155	0.82	(0.79 to 0.85)
No 12-month disorder	19334	0.91	(0.90 to 0.91)	No 12-month disorder	19334	0.84	(0.84 to 0.84)
No disorder[a]	2133	0.98	(0.97 to 0.98)	No disorder[a]	2133	0.88	(0.87 to 0.88)

[a] Lifetime chronic conditions and post-traumatic stress disorder (PTSD) are available only for a group of the total sample (it is a two-phase study) called 'part II sample'.
[b] OCD is only available for 33% of the part II sample.
This table was kindly provided by Alonso and colleagues[153] on behalf of the ESEMeD group.

TABLE 56 *Results for OCD: SF-36 scores (mean ± SD)*[154]

	OCD (*n* = 60)	**US population (*n* = 2474)**
Physical functioning	88.8 ± 15.6	84.2 ± 23.3
Pain	79.4 ± 21.1	75.2 ± 23.7
Role limitations due to physical problems	77.5 ± 33.7	81.1 ± 34.0
General health	69.4 ± 21.2	72.0 ± 20.3
Social functioning	68.7 ± 26.7	83.3 ± 22.7
Role limitations due to emotional problems	52.8 ± 33.8	81.3 ± 33.0
Mental health	51.7 ± 18.4	74.4 ± 18.1
Vitality	44.3 ± 19.9	60.9 ± 21.1

TABLE 57 *Mean YBOC scores and mapped EQ scores (with distributions) for responders and non-responders*

	YBOCS score	EQ-5D	Distribution
Responders	8.125	0.92 (0.07)	*B* (13.81, 1.21)
Non-responders	12.5	0.795 (0.15)	*B* (4.96, 1.28)

just 21 completed the obsessive scale of the YBOCS and only four completed the compulsive scale. This exclusion of so many cases represents an error in the filtering process; nonetheless, the number completing the obsessive scale provided enough to estimate functions to map between this scale and the preference-based measures. The ESEMeD group undertook the mapping exercise for this review. They found that a one-point reduction in the obsessive scale was equivalent to a 0.04 reduction in the EQ-5D preference scale (p=0.0006). A similar model for the SF-6D estimated a decrement of 0.03. This algorithm was applied to the Greist data to convert those who responded to the YBOCS to EQ-5D scores.

YBOCS values for non-responders are assumed to be 25 (i.e. the mean pretreatment score) and responders to be equivalent to a post-treatment score of 16. These scores were converted into EQ-5D scores by applying the mapping function from the obsessive scale to the 0.04 decrement per point change in the score. The overall YBOCS score is composed of the obsessive and compulsive subscale scores, each contributing half of the overall score. The Greist study does not report a separate obsessive subscale score and so it was assumed that it contributed 50% of the gain. This assumption is supported by a finding from the Kenwright[86] study that reports the two subscales, where an overall change of 6.3 in the schedules group was divided into 3.2 on the obsessive scale and 3.1 on the compulsions scale. This results in the values shown in *Table 57*.

Appendix 11

Costs of interventions, methods and results

Methods

The provision of CCBT results in costs from the following: licence fees, computer hardware, screening of patients for suitability, clinical support, capital overheads (for facilities for computer and clinician) and the training of staff. While there are a number of important differences in the costs of the three products, the basic principles of costing are very similar.

Licence fee

Each product comes with a licence fee tariff, with all products offering a fixed fee for purchase at the level of general practice. Cope also offers licences at other organisational levels: PCT, strategic health authority, NHD PASA Consortium and country (England, Wales and Scotland). The costs per GP and per patient are substantially less at these higher levels of purchase. For this costing exercise, it was decided to limit the costings to general practice and PCT fee, since it seems unlikely that the NHS would purchase these products at a higher level.

For Cope and FF the throughput of treated patients is assumed in the submission to be 100 per copy each year for practices with one to five GPs and 200 for those with six to ten GPs. At PCT level, it is assumed in the submission that there will be 2000 patients. For BtB the tariff is by number of machines, starting with one and going up to 50. There is no mention of the level of purchase by BtB, but one or two would relate to practice level and 20 or so to PCT or possibly a specialist centre. Overcoming Depression has two rates, one for the first copy and then a much reduced rate for subsequent copies. These licence fees seem to be aimed at practices, so it can be assumed that smaller practices would use one copy and larger practices would use two.

Throughput

The licence fee is fixed, so the cost per patient depends on the number of patients likely to use each copy. The assumption used by BtB, Cope and FF of a maximum of 100 patients per computer assumes that around 50% of capacity will be used. Based on 30 hours per week, 30×50 hours per year (i.e. 1500) and allowing for eight sessions plus 15 minutes' introduction for a full course of BtB results in 187 patients. However, the assumption of 100 patients coming forward each year in practices of one to five GPs is based on the following assumptions: (1) there are 10,000 patients per practice; (2) 1000 of these suffer from depression; and (3) 10% of these will be treated each year. There is considerable uncertainty surrounding these assumptions.

The assumed list sizes are rather high. Practices with between one to five GPs have an average of three GPs and practices of six to ten have an average of eight GPs (General Medical Statistics: England and Wales, 2002), which results in mean list sizes of around 5000 and 14,000, respectively. The assumption of a 10% prevalence of depression may be reasonable and is similar to estimates from the ONS Morbidity Survey (2000),[129] but a major problem is that many of these do not come to the attention of a GP.[130] It is not clear whether the 10% prevalence figure takes sufficient account of this problem, but the proportion of known cases may be as low as 5%. Similar issues are raised with panic phobia and OCD. Finally, the assumption that 10% of these will take up the service is only an assumption and in practice it may be very different. These figures suggest that the numbers of patients in a one to five practice may be nearer 25–50 (i.e. 5000×0.05 to 5000×0.1) patients treated and for five to ten practices it may be nearer 40–80 (8000×0.05 to 8000×0.1) and indeed even lower. The costings for Cope and FF presented below are based on midpoint estimates of 37.5 and 60, respectively, at practice level. The average size of a PCT is 165,000, rather than the 200,000 presented, and this in turn slightly reduces the numbers of patients likely to be treated to between 825 and 1650 ($165{,}000 \times 0.05$ to $165{,}000 \times 0.01$) rather than 2000, with a mid-point of 1237.5. For BT Steps these figures are further reduced to 20% of these figures to allow for the lower prevalence of OCD.

The implications for BtB and Overcoming Depression are that a smaller practice would probably buy one copy and a larger practice two copies. It has been assessed for the costings that they would achieve the same levels of throughput as Cope. They can also be purchased by a PCT and this has been assumed to be equivalent to buying 20 copies to ensure that all practices would have at least one copy.

Hardware

For practice-based provision, this is a standard item. The hardware required to run the software was given in four of the submissions as £700. To estimate an annual cost it is further assumed that each computer lasts for 3 years and has been discounted at 3.5% (i.e. an annuity factor of 2.8997). This gives an annual equivalent cost of £241.41 per machine.

What is less clear is the likely cost per patient, since at the levels of throughput being predicted above dedicated computers would be underutilised. A solution to this problem would be to make the computer available for multiple uses, including other CCBT packages. At two extremes, there will be the situation where the machine is perfectly divisible and so can be costed at the assumed rate of 100 patients per machine (whether or not they are depression patients), while the second situation assumes a dedicated machine and hence the costs are spread over fewer patients. For simplicity it is assumed that half of the time available on the machine is used for another purpose, thus reducing the original costings by half with ± 20% to allow for uncertainty in the costs of hardware.

The costs of capital overheads have been based on the value provided in the submission from Netten and Curtis.[136] It covers rental for the space, heat, light and other associated costs of providing the space necessary in a general practice for a single machine. As for hardware, this raises questions about the divisibility of the space. The costings have made the same assumptions as for hardware.

Cope and FF do not require a machine to be available in general practice. In the submission the manufacturer claims that patients can access the computer program over the Internet at other locations, such as at home or in a public library. In these cases, it is assumed in the costing that there will be no hardware cost and associated capital overheads.

Clinical support

For BtB and Overcoming Depression, there will be support provided by a professional to help the patients to use the computer program. This has been estimated in BtB to be equivalent to about 1 hour of time over the duration of treatment (which can be up to 3 months). The submission suggests that this might be provided by the practice nurse (at £23 per hour), but it could be provided by either a primary care counsellor (£32 per hour) or the much cheaper assistant psychologist (£8.91). A range has been estimated assuming all provision by assistants and all by primary care counsellors. The same level of support has been assumed for Overcoming Depression.

For Cope and FF the manufacturer recommends a brief helpline to support their products. The manufacturer assumes a total of 1 hour support per patient over the 3 months of therapy. Using quite reasonable workload assumptions, they suggest that each support worker will be able to manage around 1071 patients each year. Assuming that the helpline support worker is employed at the level of a primary mental healthcare worker with an annual cost of £22,000 p.a. (including on-costs) and this assumed workload, the company estimates a cost per patient of £21. This costing does not allow for overheads (including capital) incurred in a dedicated centre providing such a service or the qualifications and training of the staff. For practice nurses these items together add another 67% to salary costs, according to Netten and Curtis,[136] and an evaluation of NHS Direct found non-staff costs to be at a similar level.[142] This level of additional cost suggests an average brief helpline support cost per patient of £35.

There will be costs of GP monitoring of patients on CCBT, but these have not been included in the submissions. It seems likely that CCBT will occupy at least some GP time. This assumes that any GP care would have been provided without CCBT and would have been part of TAU.

There will be an additional element for the time for the staff involved in training for the use of CCBT in their practice. This cost has been annuitised over 3 years. The manufacturers claim that a varying amount of training is required for these products, from a full half-day session for BtB, to little or none for the other two products. In the costings BtB incurs costs for this item and currently the others do not. For BtB the cost of staff time has been based on a half-day session for five staff trained per machine. The five staff include a counsellor, practice nurse, psychology assistant and two GPs, costed using unit costs from Netten and Curtis.[136] The total staff cost of £229.91 has been combined with a cost of space for the training of £6.50. The same figure has been used for Overcoming Depression and Cope to ensure consistency.

Screening

The amount of additional time spent assessing the suitability of the patient for CCBT also varied

between products. A study of Overcoming Depression[93] found a 20–30 minute assessment by a psychologist. According to the manufacturer, Cope requires a very short questionnaire to be completed that takes just 5 minutes or so to assess. Overcoming Depression and BtB have been costed assuming 25 minutes of a practice nurse's or community psychiatric nurse's time (with a 20–30-minute range). The manufacturers of Cope claim that screening takes just 5 minutes and this has been used in the costing for that product.

Results

The costs of BtB, Cope, Overcoming Depression, FF and BT Steps are shown in *Tables 58–62*.

TABLE 58 *Costs of BtB*

	Expected cost (£) (range)	
	One copy	**20 copies**
Licence fee	6000	34000
Hardware (at £700, lasting 3 years, discounted at 3.5%)	120.55 (96.56–144.84)	2411 (1931.2–2896.8)
Capital overheads	800 (640–960)	16000 (12800–19200)
Clinical helper	862.5 (575–1150)	17250 (11500–23000)
Training (costs of time of staff)	81.80 (67.33–91.22)	1636 (1346.6–1824.4)
Screening (taking 25 minutes)	359.25 (239.50–479)	7185 (4790–9580)
Total annual operating costs	8224.1 (7618.39–8825.06)	78482 (66367.80–90501.20)
Total number of treatments available	37.5 (25–50)	750 (500–1000)
Total cost per patient	219.30 (152.37–353.00)	104.62 (66.36–181.00)

TABLE 59 *Costs of Cope*

	Expected cost (£) (range)		
	Home access	**1–5 GP practice**	**PCT: 20 terminals**
Licence fee	5000	5000	36000
Hardware (at £700, lasting 3 years, discounted at 3.5%)	NA	120.55 (96.56–144.84)	2411 (1931.2–2896.80)
Capital overheads	NA	800 (640–960)	16000 (12,800–19,200)
Clinical helper		None assumed	None assumed
Helpline support	1312.50 (1050–1574.4)	1312.50 (1050–1574.4)	26,250 (21,000–31,488)
Training (costs of time of staff)	81.80 (67.33–91.22)	81.80 (67.33–91.22)	1636 (1346.60–1824.4)
Screening (claimed to take 5 minutes)	29.94 (19.92–39.91)	29.94 (19.92–39.91)	598.80 (398.40–798.20)
Total annual operating costs	6424.24 (6137.25–6705.53)	7344.79 (6873.81–7809.97)	82,895.80 (73,676.6–92207.40)
Total number of treatments available	37.5 (25–50)	37.5 (25–50)	750 (500–1000)
Total cost per patient	171.30 (122.74–268.22)	195.86 (137.48–312.40)	110.53 (73.68–184.42)

TABLE 60 *Costs of Overcoming Depression*

	Expected cost (£) (range)		
	One copy	**Two copies**	**20 copies purchased by PCT**
Licence fee	500	550	8,000
Hardware (at £700, lasting 3 years, discounted at 3.5%)	120.55 (96.56–144.84)		
Capital overheads	800 (640–960)		
Clinical helper	862.5 (575–1150)		
Training (costs of time of staff)	81.80 (67.33–91.22)		
Screening (taking 25 minutes)	359.25 (239.50–479)		
Total annual operating costs	2724.1 (2118.39–3325.06)	4998.20 (3786–6200)	52482 (40,367.80–56,501.20)
Total number of treatments available	37.5 (25–50)	75 (50–100)	750 (500–1000)
Total cost per patient	72.64 (42.36–133.00)	66.64 (37.86–124)	69.98 (40.37–113)

TABLE 61 *Costs of FF*

	Expected cost (£) (range)		
	Home access	**1-5 GP practice**	**PCT: 20 terminals**
Licence fee	5000	5000	36,000
Hardware (at £700, lasting 3 years, discounted at 3.5%)	NA	120.55 (96.56–144.84)	2411 (1931.2–2896.80)
Capital overheads	NA	800 (640–960)	16,000 (12,800–19,200)
Clinical helper		None assumed	None assumed
Helpline support	1312.50 (1050–1574.4)	1312.50 (1050–1574.4)	26,250 (21,000–31,488)
Training (costs of time of staff)	81.80 (67.33–91.22)	81.80 (67.33–91.22)	1636 (1346.60–1824.4)
Screening (claimed to takes 5 minutes)	29.94 (19.92–39.91))	29.94 (19.92–39.91)	598.80 (398.40–798.20)
Total annual operating costs	6424.24 (6137.25–6705.53)	7344.79 (6873.81–7809.97)	82895.80 (73,676.6–92,207.40)
Total number of treatments available	37.5 (25–50)	37.5 (25–50)	750 (500–1000)
Total cost per patient	171.30 (122.74–268.22)	195.86 (137.48–312.40)	110.53 (73.68–184.42)

TABLE 62 *Costs of BT Steps*

	Expected cost (£) (range)		
	1–5 GP practice: home access	**1–5 GP practice: practice access**	**PCT: 20 terminals**
Licence fee	5000	5000	36,000
Hardware (at £700, lasting 3 years, discounted at 3.5%)	NA	120.55 (96.56–144.84)	2411 (1931.2–2896.80)
Capital overheads	NA	800 (640–960)	16000 (12,800–19,200)
Clinical helper	NA	NA	NA
Helpline support	262.50 (175–350)	262.50 (175–350)	5250 (3500–7000)
Training (costs of time of staff)	81.80 (67.33–91.22)	81.80 (67.33–91.22)	1636 (1346.60–1824.4)
Screening (claimed to take 5 minutes)	14.38 (9.6–19.20)	14.38 (9.6–19.20)	287.60 (192–384)
Total annual operating costs	5358.68 (5251.93–5460.42)	6279.23 (5988.49–6565.26)	61,584.60 (55,769.80–67,305.20)
Total number of treatments available	7.5 (5–10)	7.5 (5–10)	247.5 (165–330)
Total cost per patient	714.49 (525.19–1092.08)	837.23 (598.85–1313.05)	248.83 (169–407.91)

Appendix 12

Parameter values used in the economic models and their distributions

Beating the Blues

Tables 63–65 show the input parameters for the economic model. The transition from the initial state to the state post-treatment was found by calculating the percentage of people in each category immediately post-treatment. The transition rate from one category to another, applied in the second cycle of the therapy, was estimated from the McCrone trial data,[120] categorising people pretreatment and calculating for each level, how many of those transit from one category to another. People enter in a moderate state of depression in the trial and they have attached a quality of life correspondingly.

The tables show for each input, the distribution chosen for the PSA and the methods used. Distributions of rates and quality of life for each category are given beta distributions to reflect that they are bounded between 0 and 1; costs are modelled with gamma distributions to allow for the skewness of these data. The probability of being in each of the four categories is modelled with a Dirichlet distribution, which is a generalisation of the Beta distribution when there are more than two parameters.

Cost of the licence, which is a parameter that carries a certain amount of uncertainty, is modelled with a log-normal distribution. Log-normal distributions are placed around the mean cost of each intervention using the ranges as 95% confidence intervals.

The parameters for the Dirichlet distribution after treatment were found by counting the number of people in each category immediately post-treatment[120] or who transit from one category to another (second cycle).

Cope

The data on the probability of being in one of the four states post-therapy were taken from Marks.[89] The strategy to extrapolate the proportion of the patients in each severity level was to place a normal distribution having as parameters mean and standard deviation of the BDI score post-treatment. The BDI cut-off points for each severity (≤ 9, 10–18, 19–29, 30–63) were used to calculate the proportions in each category. The cost of the licence chosen in this model is the one calculated on a GP practice level. The new data for the model are shown in *Table 66*. All other data (including those for TAU) are the same as in BtB.

For the PSA, the probability of being in one of the four states post-therapy was modelled with a Dirichlet distribution. The lower numbers with respect to BtB reflect the fact that the number of the participants in the Marks study was only 39, and 23 of them only report data on BDI. The probability of dropping out was calculated by scaling down the parameters to the actual sample size of the study. Lower parameters in both the beta and the Dirichlet distribution increase uncertainty in the model. A log-normal distribution was filled to the cost of the licence to reflect the uncertainty in the range and the skewness of this cost. All the other parameters have the same distributions as in BtB.

Table 66 shows the distributions that have been changed with respect to the BtB model.

Overcoming Depression

The data on the probability of being in one of the four states post-therapy were taken from Whitfield.[93] The transition from the initial state to the state post-treatment was found by calculating the percentage of people in each category immediately post-treatment.

The cost of the licence chosen in this model is the one calculated on a PCT level (*Table 60*).

The BDI score of the patients in the Whitfield study[93] before entering the clinical trial is slightly lower than for Cope and BtB, reflecting a more severe case of depression. From those data the

TABLE 63 *BtB parameters*

Variable	In the tree	Input parameter	Source	Distribution	Distribution parameters
Probability of being in minimal state post-CCBT	Pminpost	0.447	McCrone[120]	Dir(42,34,11,7)	First parameter reflects those who become minimally depressed; second parameter reflects those who become mildly depressed; third parameter reflects those who become moderately depressed; fourth parameter reflects those who become severely depressed
Probability of being in mild state post-CCBT	Pmildpost	0.362	McCrone[120]	Dir(42,34,11,7)	
Probability of being in moderate state post-CCBT	Pmodpost	0.117	McCrone[120]	Dir(42,34,11,7)	
Probability of being in severe state post-CCBT	Psevpost	0.074	McCrone[120]	Dir(42,34,11,7)	
Probability of being in minimal state post-TAU	Pminptau	0.269	McCrone[120]	Dir(25,24,29,15)	
Probability of being in mild state post-TAU	Pmildptau	0.258	McCrone[120]	Dir(25,24,29,15)	
Probability of being in moderate state post-TAU	Pmodptau	0.312	McCrone[120]	Dir(25,24,29,15)	
Probability of being in severe state post-TAU	Psevptau	0.161	McCrone[120]	Dir(25,24,29,15)	
Probability of dropping out from BtB	Pdrop	0.3	Assumption	Beta(62.57,147)	First parameter reflects number of events; second parameter reflects those not experiencing the event
Probability of relapsing for fully recovered (from minimal to mild)	Prelmin	0.091	Thase[132]	Beta(2.07,20.93)	First parameter reflects number of events; second parameter reflects those not experiencing the event
Probability of relapsing for partially recovered (from mild to moderate)	Prelmod	0.4	Thase[132]	Beta(10.8,16.2)	First parameter reflects number of events; second parameter reflects those not experiencing the event
Probability of receiving CCBT after relapsing for CCBT arm	pCCBT	0.7	Assumption	Beta(102.2,43)	First parameter reflects number of events; second parameter reflects those not experiencing the event
Transition from mild to minimal/CCBT	Tmild_min	0.667	McCrone[120]	Dir(18,8,1,0)	First parameter reflects those who become minimally depressed; second parameter reflects those who become mildly depressed; third parameter reflects those who become moderately depressed; fourth parameter reflects those who become severely depressed
Transition from mild to mild/CCBT	Tmild_mild	0.296	McCrone[120]	Dir(18,8,1,0)	
Transition from mild to moderate/CCBT	Tmild_mod	0.037	McCrone[120]	Dir(18,8,1,0)	
Transition from mild to severe/CCBT	Tmild_sev	0.000	McCrone[120]	Dir(18,8,1,0)	
Transition from moderate to minimal/CCBT	Tmod_min	0.361	McCrone[120]	Dir(13,18,4,1)	
Transition from moderate to mild/CCBT	Tmod_mild	0.5	McCrone[120]	Dir(13,18,4,1)	
Transition from moderate to moderate/CCBT	Tmod_mod	0.111	McCrone[120]	Dir(13,18,4,1)	
Transition from moderate to severe/TAU	Tmod_sev	0.028	McCrone[120]	Dir(13,18,4,1)	
Transition from mild to minimal/TAU	Tmild_mint	0.375	McCrone[120]	Dir(9,10,4,1)	
Transition from mild to mild/TAU	Tmild_mildt	0.417	McCrone[120]	Dir(9,10,4,1)	
Transition from mild to moderate/TAU	Tmild_modt	0.167	McCrone[120]	Dir(9,10,4,1)	
Transition from mild to severe/TAU	Tmild_sevt	0.042	McCrone[120]	Dir(9,10,4,1)	
Transition from moderate to minimal/TAU	Tmod_mint	0.220	McCrone[120]	Dir(9,11,18,3)	
Transition from moderate to mild/TAU	Tmod_mildt	0.268	McCrone[120]	Dir(9,11,18,3)	
Transition from moderate to moderate/TAU	Tmod_modt	0.439	McCrone[120]	Dir(9,11,18,3)	
Transition from moderate to severe/TAU	Tmod_sevt	0.073	McCrone[120]	Dir(9,11,18,3)	
Transition from severe to minimal/TAU	Tsev_mint	0.167	McCrone[120]	Dir(4,2,7,11)	
Transition from severe to mild/TAU	Tsev_mildt	0.083	McCrone[120]	Dir(4,2,7,11)	
Transition from severe to moderate/TAU	Tsev_modt	0.292	McCrone[120]	Dir(4,2,7,11)	
Transition from severe to severe/TAU	Tsev_sevt	0.458	McCrone[120]	Dir(4,2,7,11)	

continued

TABLE 63 *BtB parameters (cont'd)*

Variable	In the tree	Input parameter	Source	Distribution	Distribution parameters
Quality of life pretreatment	Q_pre	0.58	Richards[54a]	Beta(4.93,3.58)	Parameters found with method of moments
Quality of life for minimal depression	Q_min	0.88	Richards[54a]	Beta(1.4432, 0.1968)	
Quality of life for mild depression	Q_mild	0.78	Richards[54a]	Beta(15.74,4.44)	
Quality of life for moderate depression	Q_mod	0.58	Richards[54a]	Beta(0.88,0.65)	
Quality of life for severe depression	Q_sev	0.38	Richards[54a]	Beta(0.49,0.81)	
Cost of minimal depression	C_min	122.50 (85.74)	McCrone[120]	Gamma(1.96, 0.016)	Parameters found with method of moments
Cost of mild depression	C_mild	253.50 (275.16)	McCrone[120]	Gamma(0.848, 0.003)	
Cost of moderate depression	C_mod	274.64 (505.07)	McCrone[120]	Gamma(0.295, 0.001)	
Cost of severe depression	C_sev	423.93 (741.93)	McCrone[120]	Gamma(0.32, 0.0007)	
Cost of BtB	C_lic	219.30	Cost input is for one copy of BtB	ln(5.35,0.25)	Parameters found with method of moments

[a]Parameters found by applying average EQ-5D to each of the four BDI categories.
Dir, Dirichlet.

TABLE 64 *BtB versus CBT*

[Commercial-in-confidence information has been removed.]

TABLE 65 *BtB subgroup analysis*

Variable	In the tree	Input parameters	Source	Distribution	Distribution parameters
Probability of being in minimal state after treatment/BtB	Pminpost	0.667	McCrone[120]	Dir(18,8,1,0)	First parameter reflects those who become minimally depressed; second parameter reflects those who become mildly depressed; third parameter reflects those who become moderately depressed; fourth parameter reflects those who become severely depressed
Probability of being in mild state after treatment/BtB	Pmildpost	0.296	McCrone[120]	Dir(18,8,1,0)	
Probability of being in moderate state after treatment/BtB	Pmodpost	0.036	McCrone[120]	Dir(18,8,1,0)	
Probability of being in severe state after treatment/BtB	Psevpost	0	McCrone[120]	Dir(18,8,1,0)	
Probability of being in minimal state after treatment/TAU	Pminptau	0.375	McCrone[120]	Dir(9,10,4,1)	
Probability of being in mild state after treatment/TAU	Pmildptau	0.417	McCrone[120]	Dir(9,10,4,1)	
Probability of being in moderate state after treatment/TAU	Pmodptau	0.167	McCrone[120]	Dir(9,10,4,1)	
Probability of being in severe state after treatment/TAU	Psevptau	0.042	McCrone[120]	Dir(9,10,4,1)	
Probability of dropping out	Pdrop	0.30		*B*(7.2,16.8)	First parameter reflects number of events, second parameter reflects those who do not experience the event
Probability of being in minimal state after treatment/BtB	Pminpost	0.361	McCrone[120]	Dir(13,18,4,1)	First parameter reflects those who become minimally depressed; second parameter reflects those who become mildly depressed; third parameter reflects those who become moderately depressed; fourth parameter reflects those who become severely depressed
Probability of being in mild state after treatment/BtB	Pmildpost	0.5	McCrone[120]	Dir(13,18,4,1)	
Probability of being in moderate state after treatment/BtB	Pmodpost	0.111	McCrone[120]	Dir(13,18,4,1)	
Probability of being in severe state after treatment/BtB	Psevpost	0.028	McCrone[120]	Dir(13,18,4,1)	
Probability of being in minimal state after treatment/TAU	Pminptau	0.220	McCrone[120]	Dir(9,11,18,3)	
Probability of being in mild state after treatment/TAU	Pmildptau	0.268	McCrone[120]	Dir(9,11,18,3)	
Probability of being in moderate state after treatment/TAU	Pmodptau	0.439	McCrone[120]	Dir(9,11,18,3)	
Probability of being in severe state after treatment/TAU	Psevptau	0.073	McCrone[120]	Dir(9,11,18,3)	
Probability of dropping out	Pdrop	0.3		Dir(10.8,25.2)	First parameter reflects number of events, second parameter reflects those who do not experience the event
Probability of being in minimal state after treatment/BtB	Pminpost	0.250	McCrone[120]		First parameter reflects those who become minimally depressed; second parameter reflects those who become mildly depressed; third parameter reflects those who become moderately depressed; fourth parameter reflects those who become severely depressed
Probability of being in mild state after treatment/BtB	Pmildpost	0.250	McCrone[120]		
Probability of being in moderate state after treatment/BtB	Pmodpost	0.250	McCrone[120]		
Probability of being in severe state after treatment/BtB	Psevpost	0.250	McCrone[120]		
Probability of being in minimal state after treatment/TAU	Pminptau	0.167	McCrone[120]		
Probability of being in mild state after treatment/TAU	Pmildptau	0.083	McCrone[120]		
Probability of being in moderate state after treatment/TAU	Pmodptau	0.292	McCrone[120]		
Probability of being in severe state after treatment/TAU	Psevptau	0.458	McCrone[120]		
Probability of dropping out	Pdrop	0.3		*B*(7.2,16.8)	First parameter reflects number of events, second parameter reflects those who do not experience the event

TABLE 66 *Parameter values for Cope*

Variable	In the tree	Input parameters	Source	Distribution	Distribution parameters
Probability minimal post-CCBT	Pminpost	0.156	Marks[89]	Dir(4.23,12.12,9.93,0.95)	First parameter reflects those who become minimally depressed after Cope; second parameter reflects those who become mildly depressed after Cope; third parameter reflects those who become moderately depressed after Cope; fourth parameter reflects those who become severely depressed after Cope
Probability mild post-CCBT	Pmildpost	0.445	Marks[89]	Dir(4.23,12.12,9.93,0.95)	
Probability moderate post-CCBT	Pmodpost	0.365	Marks[89]	Dir(4.23,12.12,9.93,0.95)	
Probability severe post-CCBT	Psevpost	0.035	Marks[89]	Dir(4.23,12.12,9.93,0.95)	
Probability minimal post-TAU	Pminptau	0.269	Marks[89]	Dir(8.608,8.256,9.984,5.15)	Parameters have been scaled down to reflect the actual sample size of the study
Probability mild post-TAU	Pmildptau	0.258	Marks[89]	Dir(8.608,8.256,9.984,5.15)	
Probability moderate post-CCBT	Pmodptau	0.312	Marks[89]	Dir(8.608,8.256,9.984,5.15)	
Probability severe post-CCBT	Psevptau	0.161	Marks[89]	Dir(8.608,8.256,9.984,5.15)	
Probability of dropping out	P_drop	0.30	Probability of dropping out from Cope	*B*(11.7,27.3)	First parameter reflects number of events, second parameter reflects those not experiencing the event
Cost of Cope	C_lic	195.86	Cost at GP practice level	ln(5.25, 0.25)	Method of moments. Parameters calculated to reflect uncertainty at a GP practice level

TABLE 67 *Parameter values for Overcoming Depression*

Variable	In the tree	Input parameters	Source	Distribution	Distribution parameters
Probability minimal post-CCBT Probability mild post-CCBT Probability moderate post-CCBT Probability severe post-CCBT	Pminpost Pmildpost Pmodpost Psevpost	0.267 0.267 0.333 0.133	Whitfield[93] Whitfield[93] Whitfield[93] Whitfield[93]	Dir(4,4,5,2) Dir(4,4,5,2) Dir(4,4,5,2) Dir(4,4,5,2)	First parameter reflects those who become minimally depressed after Overcoming Depression; second parameter reflects those who become mildly depressed after Overcoming Depression; third parameter reflects those who become moderately depressed after Overcoming Depression; fourth parameter reflects those who become severely depressed after Overcoming Depression
Quality of life pretreatment	Q_pre	0.51	Whitfield[93]	Beta(4.97,3.27)	Calculated using method of moments
Probability minimal post-TAU Probability mild post-TAU Probability moderate post-CCBT Probability severe post-CCBT	Pminptau Pmildptau Pmodptau Psevptau	0.269 0.258 0.312 0.161		Dir(4.035,3.87,4.68,2.415) Dir(4.035,3.87,4.68,2.415) Dir(4.035,3.87,4.68,2.415) Dir(4.035,3.87,4.68,2.415)	Parameters have been scaled down to reflect the actual sample size of the study
Probability of dropping out	P_drop	0.30	Probability of dropping out from Cope	*B*(4.5,10.5)	First parameter reflects number of events; second parameter reflects those not experiencing the event
Cost of the Overcoming Depression	C_lic	195.86	Cost at GP practice level	ln(5.25, 0.25)	Method of moments. Parameters calculated to reflect uncertainty at a GP practice level

average EQ-5D score was calculated, by linking their severity category to the respective EQ-5D score in Appendix 10. The quality of life score is slightly lower than in Cope and BtB (0.51 versus 0.55).

The new data for the model are shown in *Table 67*. All other data (including those for TAU) are the same as in *Table 63*).

As for Cope, a PSA was for Overcoming Depression, replacing some probability distributions and substituting new ones from the original model.

The probability of being in one of the four states post-therapy was modelled with a Dirichlet distribution. The parameters were calculated according to the number of people in each category immediately post-treatment. The parameters are very low as the sample size was composed of only 15 individuals. The probability of dropping out was calculated by scaling down the parameters to the actual sample size of the study. Lower parameters in both the beta and the Dirichlet distribution increase uncertainty in the model. A log-normal distribution was fitted to the cost of the licence to reflect the uncertainty in the range and the skewness of this cost. *Table 67* shows the probability distribution placed on the new parameters. All the other parameters have the same distributions as in *Table 63*.

FearFighter

Table 68 shows the data used to populate the model. Response rates were estimated by placing a normal distribution with mean and standard deviation equal to those of the score post-treatment of the global phobia item of the FQ. *Table 68* shows the distribution placed on the parameters input to perform the PSA.

BT Steps

Table 69 shows the parameters chosen for the model and the distribution to perform PSA. Response rate has been calculated placing a normal distribution centred in the mean and standard deviation of YBOCS post-treatment. As the baseline corresponds to a score of 25, the 35% improvement was calculated and subtracted from 25 to obtain 16.25. On that normal distribution the proportion of those scoring less than 16.25 was calculated as responders. Data from the ESEMeD survey[153] reported on EQ-5D and YBOCS. A regression was carried out to link YBOCS to EQ-5D. As values from the ESEMeD survey[153] were only on the obsessive scale (excluding the compulsive scale), those values were halved to allow the transformation.

TABLE 68 *Parameter values for FF and comparators*

Variable	In the model	Input parameter	Description	Distribution	Distribution parameters
Full cost of clinician CBT	Cost_cbt	£396	Calculated on six hourly session of behavioural therapy (£66 per hour) performed by practice nurse		
Cost of relaxation	Cost_rel	£23		Beta(1.42,18.58)	First parameter reflects number of events; second parameter reflects those not experiencing the event
Cost of FF	Cost_lic	£195.86	GP practice level	ln(5.25,0.25)	Distribution of cost at GP practice level
Cost of a GP visit	C_gp	£22	Cost of a surgery attendance		
Relapse rate at 3 months	pRel	0.045	Liebowitz.[135] Probability of relapse from CBT at 3 months	*B*(0.45,11.46)	First parameter reflects number of events; second parameter reflects those not experiencing the event
Response rate for clinician therapy Response rate for FF Response rate for relaxation	rspClin respFear respRel	0.6513 0.5346 0.1586	Derived from Marks trial[88]	Beta(19,10) Beta(11,9) Beta(3,13)	First parameter reflects number of events; second parameter reflects those not experiencing the event
Quality of life (panic–phobia state) Quality of life (well state)	q_anx q_well	0.69 0.88	ESEMeD survey[153]	*B*(482.23,216.20) *B*(147.80,20.16)	Method of moments

TABLE 69 *Parameter values for BT Steps and comparators*

Variable	In the model	Input parameter	Notes	Input distribution	Distribution parameters
Full cost of clinician CBT	Cost_cbt	£726	11 hours of CBT provided by clinical psychologist (£66 per hour)		
Cost of BT Step	Cost_lic	£837.23	GP practice level	ln(6.71,0.22)	Method of moments
Cost of a GP visit	C_gp	£22	Cost of a surgery attendance		
Cost of 1 hour of relaxation	cost_cbt	£23	Cost of 1 hour of relaxation provided by psychologist		
Response rate for clinician therapy Response rate for BT Steps Response rate for relaxation	rspClin respFear respRel	0.42 0.33 0.13	Derived from 35% improvement on YBOCS with respect to baseline (baseline = 25)	*B*(38,52) *B*(30,60) *B*(12,78)	First parameter reflects number of events; second parameter reflects those not experiencing the event
Quality of life for responders Quality of life for non-responders and pretreatment	q_resp q_nresp	0.92 (0.07) 0.795 (0.15)	YBOCS converted into EQ-5D according to regression performed on ESEMeD survey.[153]	*B*(13.81,1.21) *B*(4.96,1.28)	Method of moments

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We look forward to hearing from you.

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