Telephone administered cognitive behaviour therapy for treatment of obsessive compulsive disorder: randomised controlled non-inferiority trial

Karina Lovell, Debbie Cox, Gillian Haddock, Christopher Jones, David Raines, Rachel Garvey, Chris Roberts and Sarah Hadley

BMJ 2006;333;883-; originally published online 25 Aug 2006;
doi:10.1136/bmj.38940.355602.80

Telephone administered cognitive behaviour therapy for treatment of obsessive compulsive disorder: randomised controlled non-inferiority trial

Karina Lovell, Debbie Cox, Gillian Haddock, Christopher Jones, David Raines, Rachel Garvey, Chris Roberts, Sarah Hadley

Abstract

Objectives To compare the effectiveness of cognitive behaviour therapy delivered by telephone with the same therapy given face to face in the treatment of obsessive compulsive disorder.
Design Randomised controlled non-inferiority trial.
Setting Two psychology outpatient departments in the United Kingdom.
Participants 72 patients with obsessive compulsive disorder.
Intervention 10 weekly sessions of exposure therapy and response prevention delivered by telephone or face to face.
Main outcome measures Yale Brown obsessive compulsive disorder scale, Beck depression inventory, and client satisfaction questionnaire.
Results Difference in the Yale Brown obsessive compulsive disorder checklist score between the two treatments at six months was −0.55 (95% confidence interval −4.26 to 3.15). Patient satisfaction was high for both forms of treatment.
Conclusion The clinical outcome of cognitive behaviour therapy delivered by telephone was equivalent to treatment delivered face to face and similar levels of satisfaction were reported.
Trial registration Current Controlled Trials ISRCTN500103984.

Introduction

Cognitive behaviour therapy, particularly graded exposure and response prevention, is effective in treating obsessive compulsive disorder.[1] The current mode of delivery is a 45-60 minute face to face session with the therapist each week, between the hours of 9 am and 5 pm. Such a mode of delivery results in long waiting lists and precludes access to treatment. Providing treatment over the telephone could increase access to patients who cannot attend clinic appointments. Telephone delivery of cognitive behaviour therapy is growing.[2–4] A pilot study of telephone delivery of such treatment in obsessive compulsive disorder showed potential with regard to effectiveness and reduced therapist time, and a larger open study found a good outcome.[5 6]

Methods

Design, objectives, and randomisation

We carried out a randomised controlled non-inferiority trial that compared exposure therapy and response prevention delivered either face to face during traditional 60 minute appointments or by telephone with reduced contact with the therapist. We hypothesised that exposure therapy and response prevention delivered by either of these methods will have similar clinical outcomes in the treatment of obsessive cognitive disorder.

Participants

We recruited patients during 2001 and 2002 from two psychology outpatient treatment units in greater Manchester. All patients were assessed at screening clinics, and patients whose main problem was obsessive compulsive disorder were invited to take part. Inclusion criteria were diagnosis of obsessive compulsive disorder; obsessive compulsive disorder as the main presenting problem; score of 16 or more on the Yale Brown obsessive compulsive checklist; and age 16-65. We excluded patients with obsessional slowness, organic brain disease, a diagnosis of substance misuse, or severe depression with suicidal intent, and patients who had been on a stable dose of antidepressants or anxiolytics for less than three months.

Outcomes

Primary outcome measure was the Yale Brown obsessive compulsive checklist (self report version).[7] This is a 10 item questionnaire; each question scores between 0 and 4 (0 no symptoms, 4 severe symptoms). The total score range is 0-7 very mild, 8-15 mild, 16-23 moderate, 24-31 marked, and 32-40 severe. A secondary outcome measure was the Beck depression inventory.[8] Satisfaction with treatment was measured using the client satisfaction questionnaire at the initial follow-up visit.[9]

Procedure

To establish baseline data we assessed patients twice, with four weeks in between before randomisation to treatment groups. Researchers blinded to treatment allocation assessed patients at both of the baseline visits, the initial visit after treatment, and at one, three, and six months of follow-up.

Interventions

Face to face therapy consisted of 10 one hour sessions with the therapist on an individual basis. In the first session the therapist explained the rationale of graded exposure and response prevention. In collaboration with the patient, therapists used the assessment data to devise a hierarchy of fears. From this hierarchy, patients and therapists set weekly targets to be completed between sessions. The therapist encouraged the patient to progress though the hierarchy of fears by practising their targets for at least one hour a day and monitoring their progress on a homework sheet. The therapist reviewed homework, helped devise weekly

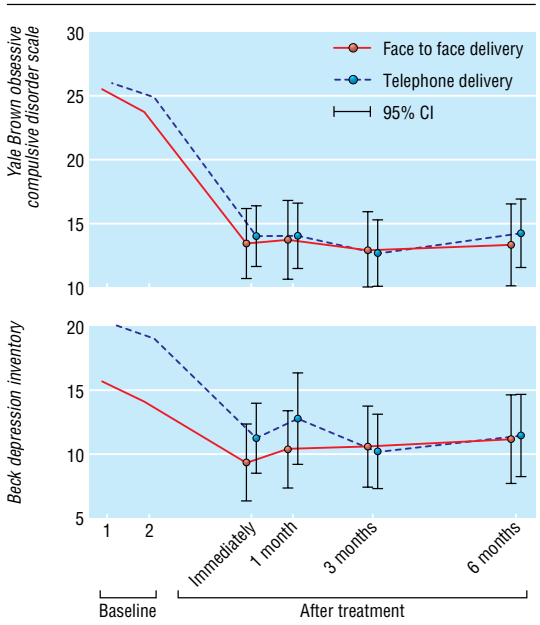
ELPS *This is the abridged version of an article that was posted on bmj.com on 25 August 2006: http://bmj.com/cgi/doi/10.1136/bmj.38940.355602.80*

Department of Nursing, Midwifery, and Social Work, University of Manchester, Manchester M13 9PL
Karina Lovell *professor of mental health*
School of Psychological Sciences, University of Manchester, Manchester M15 6SZ
Gillian Haddock *professor of clinical psychology*
Biostatistics Group, Division of Epidemiology and Health Sciences, Stopford Building, University of Manchester, Manchester M13 9PT
Chris Roberts *senior lecturer in medical statistics*
Sarah Hadley *research assistant*
CBT Department, Cheshire and Wirral NHS Partnership NHS Trust, Macclesfield District General Hospital, Macclesfield SK10 3BL
Debbie Cox *cognitive behaviour psychotherapist*
British Psychological Society, Centre for Clinical, Outcomes, Research, and Effectiveness, Sub-department of Clinical Health Psychology, University College London, London WC1E 6BT
Christopher Jones *health economist*

continued over

BMJ 2006;333:883–6

Department of Clinical Psychology, Pennine Care NHS Trust, Stepping Hill Hospital, Stockport SK2 7JE
David Raines *cognitive behaviour therapist*
Leicestershire Partnership NHS Trust, Department of Cognitive and Behavioural Psychotherapy, Leicester LE3 1AR
Rachel Garvey *cognitive behavioural psychotherapist*
Correspondence to: K Lovell Karina.Lovell@manchester.ac.uk



Scores for Yale Brown obsessive compulsive disorder checklist and Beck depression inventory from first baseline visit to six months of follow-up

targets, encouraged the use of a co-therapist (relative or friend), pre-empted difficulties, and helped solve problems.

Telephone therapy consisted of one face to face session with the therapist that covered the same material as the first session of the face to face arm, followed by eight scheduled weekly telephone calls of up to 30 minutes in length. Treatment was the same as in the face to face arm, but it was delivered in a shorter period of time and the therapist sent homework sheets to the patient. The therapist's role was the same as in the face to face arm. The final session was a one hour face to face treatment session.

Treatment was delivered by two trained and experienced cognitive behaviour therapists (one therapist at each site delivered both forms of treatment). Consistency of treatment was maintained by therapist manuals, fortnightly supervision, and training days every four months during the first year of the study.

Sample size and statistical methods

We analysed the data on an intention to treat basis and assumed that missing data were missing at random. We did not use the "last observation carried forward" method to imput data. To assess non-inferiority of the two treatments, we computed the two sided 95% confidence interval of the difference between treatments. Using this method, the experimental treatment is not inferior to the control treatment at a 2.5% level if the upper boundary is below a prespecified margin of non-inferiority, in this case 5 units on the Yale Brown obsessive compulsive checklist. With 40 participants in each group (allowing for attrition of eight in each group) and a within group standard deviation of 7.9, the study would have 80% power to reject the null hypothesis that telephone therapy is inferior to face to face therapy. See bmj.com for details.

Results

Flow of participants, follow-up, and sample characteristics

We invited 91 patients to be assessed. After exclusions, 72 participants completed the baseline assessment and were randomised to treatment (36 for each arm). Four did not complete their treatment and three were lost to follow-up at six months. See bmj.com for baseline characteristics and flow of participants through the trial.

Clinical outcome

The figure shows the mean scores for the obsessive compulsive disorder and depression scales in the two treatment groups. A mean Yale Brown checklist score

Main outcome measures and effect of treatment in patients with obsessive compulsive disorder

	Treatment delivered by telephone		Treatment delivered face to face		Adjusted* mean difference between treatment groups (95% CI)
Measure	**Mean (SD)**	**No**	**Mean (SD)**	**No**	
Yale Brown obsessive compulsive disorder score					
Before randomisation:					
1st baseline visit	25.9 (4.9)	36	25.5 (5.5)	36	
2nd baseline visit	24.9 (4.7)	36	23.7 (5.8)	36	
After randomisation:					
Immediately after treatment	14 (6.9)	35	13.4 (7.7)	33	−0.59 (−3.51 to 2.34)
1 month follow-up visit	14 (7.3)	33	13.7 (8.5)	32	−0.92 (−4.31 to 2.47)
3 month follow-up visit	12.6 (7.5)	34	12.9 (7.7)	29	−1.11 (−4.60 to 2.37)
6 month follow-up visit	14.2 (7.8)	35	13.3 (8.6)	30	−0.55 (−4.26 to 3.15)
Beck depression inventory score					
Before randomisation:					
1st baseline visit	20.2 (10.4)	36	15.7 (8.5)	36	
2nd baseline visit	19.1 (10.6)	36	14.1 (9.1)	36	
After randomisation:					
Immediately after treatment	11.2 (8.0)	35	9.3 (8.5)	33	−0.52 (−3.66 to 2.63)
1 month follow-up visit	12.7 (10.1)	33	10.3 (8.4)	32	0.13 (−4.01 to 4.27)
3 month follow-up visit	10.1 (8.4)	34	10.6 (8.4)	29	−1.79 (−5.65 to 2.08)
6 month follow-up visit	11.5 (9.5)	35	11.1 (9.1)	29	−2.46 (−6.38 to 1.47)
Score on client satisfaction questionnaire					
Immediately after treatment	28.74 (3.6)	34	29.84 (2.9)	32	−0.81 (−2.46 to 0.84)

*Analysis of covariance: adjusted for baseline Beck depression inventory score, baseline Yale Brown obsessive compulsive disorder score, and site.

of 25 before treatment indicates obsessive compulsive disorder of marked severity. The table gives the mean values for each treatment group. Differences between the two sets of baseline scores for the obsessive compulsive disorder checklist and depression inventory were not statistically significant (mean difference for Yale Brown checklist 1.4 (95% confidence interval 0.32 to 3.13) and for Beck depression inventory 1.3 (1.96 to 4.56)).

Clinical outcome at all four time points was equivalent for both treatment arms. At six months of follow-up the adjusted estimate of the effect of treatment was 0.70 (−2.71 to 4.11) for the Yale Brown obsessive compulsive disorder checklist and 1.51 (−2.23 to 5.25) for the Beck depression inventory—a slight reduction in the mean value for telephone compared with face to face delivery. All confidence intervals for the Yale Brown checklist score are within 5 units; this suggests that the treatments are equivalent. Between the start of the treatment and the six month follow-up visit, mean scores on the Yale Brown checklist dropped by about twice the prespecified margin of non-inferiority in both treatment groups. The mean Yale Brown checklist score at six months may be slightly underestimated for the face to face treatment group owing to less complete follow-up (see bmj.com).

Treatment was deemed clinically relevant if the mean pretreatment score was reduced by two standard deviations or more after treatment. Treatment was clinically relevant in 49 patients (72%)—27 (77%) patients in the telephone treatment arm and 22 (67%) in the face to face treatment arm.

Satisfaction

Total scores on the client satisfaction questionnaire ranged from 0 to 32 (higher score indicates greater satisfaction). Patients were very satisfied with treatment, and the results were similar for both treatments (table).

Blindness

We assessed the level of blindness of the independent assessor by asking them to guess the patients' treatment status at one month of follow-up. Nine of the 72 patients directly or indirectly revealed their treatment status to the assessor. The assessors guessed 35 (56%) of the remaining 63 correctly and 28 (44%) incorrectly.

Discussion

The clinical outcome of cognitive behaviour therapy delivered by telephone was equivalent to treatment delivered face to face at all four follow-up time points and patients reported similarly high levels of satisfaction. The effect size of treatment was 2.5, which is as large or larger than other studies of face to face (individual or group) cognitive behaviour therapy in obsessive compulsive disorder.[1]

Comparison with other studies

The demographic and clinical characteristics of our patients are similar to other studies on this disorder.[10–12] Yale Brown checklist scores before and after treatment are also similar to other studies of obsessive compulsive disorder that have used exposure on its own or as part of a cognitive behavioural intervention.[10 11] Sample size in our study is equal or greater than most other studies of cognitive behaviour therapy in this disorder.[10–12] The attrition rate in our study was low compared with other studies.

What is already known on this topic

Cognitive behaviour therapy delivered by telephone may offer help to people with obsessive compulsive disorder

What this study adds

Telephone delivery of cognitive behaviour therapy for obsessive compulsive disorder results in equivalent clinical outcome and similar levels of patient satisfaction as traditionally delivered face to face approaches

This form of treatment delivery is an accessible intervention that can reduce costs and therapist time

Implications

Telephone sessions were 30 minutes (50%) shorter than face to face sessions; this equates to more than a 40% saving in the therapist's time. This has important economic implications. Our findings also support guidelines for obsessive compulsive disorder,[1] which encourage cognitive behaviour therapy delivered by telephone.

Limitations

We did not include a control (no treatment) group. However, we found no differences between the two sets of baseline scores so few improvements were made in the absence of treatment. This finding is consistent with other studies.[13 14] We did not compare treatment with another psychological intervention. However, other studies that have used interventions not based on cognitive behaviour therapy, such as relaxation and anxiety management, have shown poor results.[10 15] Patients in our study were followed up for six months only, which precludes conclusions on the long term efficacy of telephone treatment. Finally, our findings may only be relevant to settings in which patients are treated by experienced therapists in departments that specialise in cognitive behaviour therapy.

Contributors: See bmj.com.

Funding: NHS Executive North West (Research and Development Fund).

Competing interests: None declared.

Ethical approval: South Cheshire local research committee M125/01; Stockport ethics committee RJC/SPR/1809.

1 National Institute for Health and Clinical Excellence. *Obsessive compulsive disorder*. Clinical guideline 31. www.nice.org.uk/CG031 (last accessed 18 Aug 2006).
2 Mohr DC, Lokosky W, Bertagnoli A, Goodkin DE, Wende J, Dwyer P, et al. Telephone-administered cognitive behavioural therapy for the treatment of depressive symptoms in multiple sclerosis disorder. *J Clin Consult Psychol* 2000;68:356-61.
3 Palmer RL, Birchall H, McGrain L, Sullivan V. Self-help for bulimic disorders: a randomised controlled trial comparing minimal guidance with face-to-face or telephone guidance. *Br J Psychiatry* 2002;181:230-5.
4 McNamee G, O'Sullivan G, Lelliott P, Marks I. Telephone-guided treatment for housebound agoraphobics with panic disorder: exposure vs relaxation. *Behav Ther* 1989;20:491-7.
5 Lovell K, Fullalove L, Garvey R, Brooker C. Telephone treatment of obsessive-compulsive disorder. *Behav Cogn Psychother* 2000;28:87-91.
6 Taylor S, Thordarson DS, Spring T, Yeh AH, Corcoran KM, Eugster K, et al. Telephone-administered cognitive behaviour therapy for obsessive-compulsive disorder. *Cogn Behav Ther* 2003;32:13-25.

7 Goodman WK, Ramussen SA, Price LH, Mazure C, Henninger GR, Charney DS. The Yale-Brown obsessive-compulsive scale: development, use, and reliability. *Arch Gen Psychiatry* 1989;46:1006-16.
8 Beck AT, Ward CH, Mendelson M, Mock J, Erbaugh J. An inventory for measuring depression. *Arch Gen Psychiatry* 1961;4:561-71.
9 Attkinson C, Zwick R. The client satisfaction questionnaire: psychometric properties and correlations with service utilisation and psychotherapy outcome. *Eval Program Planning* 2003;5:233-7.
10 Lindsay M, Crino R, Andrews G. Controlled trial of exposure and response prevention in obsessive-compulsive disorder. *Br J Psychiatry* 1997;171:135-9.
11 Cordioli AV, Heldt E, Bochi DB, Margis R, Basso de Sousa M, Tonello JF, et al. Cognitive-behavior group therapy in obsessive-compulsive disorder: a randomized clinical trial. *Psychother Psychosomat* 2003;72:211-6.
12 Vogel PA, Stiles TC, Gotestam KG. Adding cognitive therapy elements to exposure therapy for obsessive compulsive disorder: a controlled study. *Behav Cogn Psychother* 2004;32:275-90.
13 O'Connor K, Todorov C, Robillard S, Borgeat F, Brault M. Cognitive-behaviour therapy and medication in the treatment of obsessive-compulsive disorder; a controlled study. *Can J Psychiatry* 1999;44:64-71.
14 Jones MK, Menzies RG. Danger ideation reduction (DIRT) for obsessive compulsive washers: a controlled trial. *Behav Res Ther* 1998;36:959-70.
15 Fals-Stewart W, Marks A, Schafer J. A comparison of behavioural group therapy and individual behaviour therapy in treating obsessive compulsive disorder. *J Nerv Ment Dis* 1993;181:189-93.

(Accepted 21 July 2006)

doi 10.1136/bmj.38940.355602.80

Hope and advance care planning in patients with end stage renal disease: qualitative interview study

Sara N Davison, Christy Simpson

Editorial by Murray et al

Division of Nephrology and Immunology, University of Alberta, Edmonton, Alberta, Canada
Sara N Davison *assistant professor, medicine*
Department of Bioethics, Dalhousie University, Halifax, Nova Scotia, Canada
Christy Simpson *assistant professor*
Correspondence to: S N Davison sara.davison@ualberta.ca

BMJ 2006;333:886–9

Abstract

Objective To understand hope in the context of advance care planning from the perspective of patients with end stage renal disease.
Design Qualitative in-depth interview study.
Setting Outpatient department of a university affiliated nephrology programme.
Participants 19 patients with end stage renal disease purposively selected from the renal insufficiency, haemodialysis, and peritoneal dialysis clinics.
Results Patients' hopes were highly individualised and were shaped by personal values. They reflected a preoccupation with their daily lives. Participants identified hope as central to the process of advance care planning in that hope helped them to determine future goals of care and provided insight into the perceived benefits of advance care planning and their willingness to engage in end of life discussions. More information earlier in the course of the illness focusing on the impact on daily life, along with empowerment of the patient and enhancing professional and personal relationships, were key factors in sustaining patients' ability to hope. This helped them to imagine possibilities for a future that were consistent with their values and hopes. The reliance on health professionals to initiate end of life discussions and the daily focus of clinical care were seen as potential barriers to hope.
Conclusions Facilitated advance care planning through the provision of timely appropriate information can positively enhance rather than diminish patients' hope. Current practices concerning disclosure of prognosis are ethically and psychologically inadequate in that they do not meet the needs of patients.

Introduction

About 15-29% of deaths of patients with end stage renal disease result from a decision to discontinue dialysis.[1] Comprehensive care of these patients therefore requires skill in advance care planning to lay out a set of values and processes for approaching end of life decisions and identify preferences for future goals of care. This includes attention to ethical, psychosocial, and spiritual issues related to starting, continuing, withholding, and stopping dialysis.[2 3] Advance care planning differs from traditional advance directives, which are legal documents that tend to outline limited treatment options and are only one optional component. The End Stage Renal Disease Workgroup on End-of-Life Care recommends that dialysis units facilitate advance care planning, yet this is not occurring.[4] Patients often do not know that they have the option to withdraw from dialysis,[5 6] and relatively few choose a do not resuscitate order,[7] despite the extremely poor chance of survival in these patients after cardiopulmonary resuscitation.[8] Patients undergoing dialysis typically do not view themselves as terminally ill and falsely assume they can be kept alive indefinitely on dialysis. Issues relating to death and dying are commonly avoided until late in the illness.

Hope can make a difference in patients' experiences with chronic illness and in how they live their lives. Patients have indicated that what healthcare providers say and do can affect their ability to hope.[9 10] Healthcare providers have an obligation to promote, maintain, and instil hope in their patients[11 12] and the "... moral issue of whether to tell the truth has now shifted from the disclosure of diagnosis to disclosure of prognosis."[11] Can health professionals fulfil both of these responsibilities simultaneously during advance care planning? We do not know how discussions about prognosis and end of life care affect the ability of patients to hope, especially in the context of chronic illness, and whether we can sustain hope in patients with end stage renal disease yet meet their end of life needs.

Methods

We used interpretative description of interviews with patients.[13 14] This technique recognises that

An expanded methods section can be found on bmj.com.

This is the abridged version of an article that was posted on bmj.com on 21 September 2006: http://bmj.com/cgi/doi/10.1136/bmj.38965.626250.55