

Internet-Guided Self-Help with or without Exposure Therapy for Phobic and Panic Disorders

A Randomised Controlled Trial

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Key Words

Computer-aided self-help · Internet-accessed therapy · Self-exposure therapy · Cognitive behaviour therapy · Phone support · Panic disorder · Phobia · Agoraphobia · Social phobia · Specific phobia · Relaxation · Randomised controlled trial

Abstract

Background: As many sufferers from phobic and panic (phobia/panic) disorders cannot get to suitable therapists, routine aspects of therapy were delegated to internet-accessed computer-aided self-help with or without exposure instructions. **Methods:** Phobia/panic referrals were randomised to computer-aided self-help via the internet at home in a 2:1 ratio either by self-exposure cognitive behaviour therapy (CBT) [*FearFighter (FF)*, $n = 45$] or by minimal CBT without exposure [*Managing Anxiety (MA)*, $n = 23$]. All had brief backup phone advice from a clinician concerning their computer guidance. **Results:** On self-ratings and blinded assessor ratings, patients improved equally with each form of self-help over 10 treatment weeks but significantly more on 5 out of 10 measures by week 14 (1-month follow-up) when the self-help included self-exposure instructions than when it did not. In accord with this, standardised effect sizes (Cohen's d)

indicated superiority of *FF* over *MA* on 5 measures by week 14. Satisfaction with treatment in all patients pooled correlated positively with improvement after treatment and at 1-month follow-up. **Conclusions:** At the end of treatment, computer-aided CBT self-help at home via the internet plus brief live helpline support was effective with or without exposure instructions, and at 1-month follow-up it was more effective on some measures if exposure instructions had been included. Analysis is needed of how non-exposure CBT produced its shorter-term effect.

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Introduction

Phobic and panic disorders (phobia/panic) afflict 1 in 9 people in the course of their lives and is often disabling. Sufferers use many health care resources [1, 2] and usually improve lastingly with exposure therapy, yet most go untreated [1]. Obstacles to treatment include long waiting lists, too few qualified therapists, distance from clinics, inconvenience of session times and fear of stigma from a mental health referral. Computer-aided exposure therapy might reduce these problems [3], especially if accessed on the internet at home.

A randomised controlled trial (RCT) compared the value of self-exposure therapy guided either mainly by a stand-alone computer system (*FearFighter* – *FF*) or entirely by a clinician face-to-face, and of self-relaxation guided mainly by a different stand-alone computer system [4]. Each of the two self-exposure groups improved significantly and similarly after treatment and at 1-month follow-up, and significantly more than the relaxation group. The patients had used the computer systems at a clinic and had brief face-to-face support from a therapist. Similar results were found in 2 open studies of a stand-alone form of *FF* in clinics [5, 6].

Many phobics find it hard to get to a clinic, so we modified *FF* to allow its use at home on the net, obviating any need to travel to a therapist. As net-accessed *FF* was effective in a small pilot study [7], we designed a new RCT to compare net-accessed *FF* which guides the self-exposure aspect of cognitive behaviour therapy (CBT) with a contrasting net-accessed system (*Managing Anxiety* – *MA*; see below) which guides other minimal CBT but excludes exposure advice. This comparison was needed as some non-exposure therapies improve phobias [8].

We hypothesised that by end of the treatment and follow-up phobia/panic would improve more with net-guided CBT outside a clinic if it emphasised exposure (*FF*) than if it did not (*MA*). We designed the study to control in advance for 5 issues: (a) effect of net-accessed computer-guided self-help plus brief live helpline support from a clinician, (b) effect of emphasising self-help with homework and diary keeping, (c) time and minimum number of sessions using a computer system, (d) time and number of contacts with a therapist and (e) phobia type (agoraphobia, social and specific phobia).

Methods

Protocol and Randomisation

The West Midlands Multi-Centre Research Ethics Committee approved the study protocol. Stratifying for phobia type (agoraphobia, social and specific phobia), patients were randomised to one of 2 treatments over 10 weeks, either to *FF* (net-guided self-exposure) or to *MA* (net-guided minimal CBT including relaxation but excluding exposure) in a 2 *FF*:1 *MA* ratio. This ratio reflected an expectation that *MA* would be ineffective as relaxation had been [4] and experience of net-guided *FF* with more patients was needed. At week 14 (1-month follow-up), the unimproved patients were offered an alternative treatment.

Power calculations rested on independent sample t tests of the pre- to post-treatment difference between stand-alone *FF* and relaxation without exposure in a previous RCT [4]. *MA* was expected to improve minimally like relaxation on the Fear Questionnaire (FQ) ‘global phobia’ (see measures below), so an *FF-MA* difference

should be detectable with an 80% power at a 5% significance level with at least 30 patients (20 *FF*, 10 *MA*). Enrolment of 36 *FF* and 18 *MA* patients was planned in anticipation of drop-outs.

Each new referral to a self-help clinic [6] was posted a description of the study, consent form and pretreatment questionnaire (PQ). The PQ sought personal information and ratings of global phobia and main problem, measured with the FQ, and physical and psychological status including suicidality. Referrals who returned a completed PQ and rated 4 or more on the scale from 0 to 8 of the FQ global phobia and the FQ main problem (see measures below) were offered a 40-min telephone screening interview within 2 days.

At the screening interview, the clinician checked suitability for the RCT. Criteria were: suitable on the PQ; ICD-10 criteria, i.e. presence of agoraphobia with or without panic disorder, social phobia or specific phobia; rated 4 or more on the scale from 0 to 8 for global phobia, main problem and main goal negotiated and set with the clinician; phobia duration >1 year; no current psychotic illness; no suicide plans, severe depression or disabling cardiac or respiratory disease; not on a benzodiazepine or diazepam-equivalent dose of >5 mg/day; drank <21 units (men) or <14 units (women) of alcohol a week; not begun or changed dose or type of antidepressant within the last 4 weeks; no substance abuse; no failed past exposure therapy of >4 sessions; no reading disorder hindering net use; informed written consent.

At the end of the telephone screening interview, the interviewer found the randomly assigned treatment condition for the suitable patients by opening the next opaque, sealed envelope in a previously mixed up pile of trial-numbered envelopes in the required 2:1 ratio. Each envelope contained a card noting the randomised treatment for a given patient’s trial number.

Treatment Conditions

All patients had 6 scheduled brief therapist contacts by phone or e-mail over 10 weeks and 2 follow-up contacts 1 month later. Contact details were standardised by whichever treatment module patients were working on. The therapists’ sole contact with the patients was by phone or, in 2 cases, by e-mail. Patients were asked to complete daily homework diaries of self-exposure (*FF*) or work sheets (*MA*).

Immediately after randomisation, patients were e-mailed (n = 59) or posted (n = 9): (a) their assigned 3 pages of user instructions; (b) a password to access their assigned system on the net at their preferred site/s at home or elsewhere; (c) a helpline number for technical problems over 10 weeks; (d) a diary to record time spent on their system and time spent doing homework; (e) scales (main problem, main goal, global impression; table 1) to rate at later phone appointments, and (f) for *MA* patients only, an audio-compact disc instructing Jacobsen’s progressive muscle relaxation.

Patients accessed *FF* or *MA* for 10 weeks on the net at home or elsewhere (but not at the clinic). Net-accessed *FF* had 9 self-exposure steps to be completed in 6 sessions [4].

Net-accessed *MA* included much of the Balance self-help system which improved non-phobic anxiety/depression more than being on a waiting list [9]. We devised *MA* to test whether phobia/panic would improve less with net-accessed self-help by minimal CBT that excluded any exposure instructions (*MA*) than when it included full exposure instructions (*FF*). *MA* excluded any reference to exposure therapy or reducing avoidance, but gave other brief CBT advice. *MA* had a navigation structure like that of *FF* but with 7

Table 1. Times of self-ratings, blinded assessor ratings and therapist ratings

Week	0	1	2	4	6	8	10	14
Session	screening	1	2	3	4	5	6	1 mfu
Main problem and main goal	S, B	S	S	S	S	S	S, B	S, B
Fear questionnaire	S						S	S
Global phobia	S, B						B	B
Work/social adjustment	S, B						S, B	S, B
Global impression							S, B	S, B
Time spent on web system		S	S	S	S	S	S	
Time spent doing homework		S	S	S	S	S	S	
Patient satisfaction							S, B	
Patient-therapist contact time	T	T	T	T	T	T	T	T
Blinded rater's guess of group	B						B	B

1 mfu = 1-month follow-up; S = self-rating; B = blinded assessor rating; T = therapist rating.

rather than 9 modules and encouraged a similar amount of time spent at the computer and on homework (but of a non-exposure kind).

In session 1, *MA* introduced patients to its use and asked them to do at least a week of homework between each of the 6 sessions. Patients rated anxiety and mood on 14 items and were asked to keep a mood diary. *MA* said panic is part of a normal flight response and asked the users to note anxiety triggers and to personalise a main-problem statement and end-of-treatment goal as the relaxation group of Marks et al. [4] did. *MA* taught the reason for practising relaxation and how to do and record this. Session 2 taught how to balance health worries with positive thoughts, the link of thoughts to feelings and how to do deep and slow diaphragmatic breathing through the nose. Session 3 explained how to eat healthily, exercise regularly, promote good sleep and keep a healthy-habit diary. It asked users to set health goals and taught active progressive muscle relaxation guided by *MA* and by an audio-CD posted to them. Session 4 explained the need for new experiences to stimulate coping responses. It showed how to split a big problem into three smaller more manageable ones and to balance negative thoughts with positive ones. It introduced a problem-sorting and positive-thinking worksheet and taught passive progressive muscle relaxation using the CD. Session 5 encouraged users to keep a daily record of hassles and find ways to deal with them, and to find a personal method of distraction and practise this. Session 6 discussed why users should structure activities using a diary and find a helper to improve social contacts.

For both *FF* and *MA*, at weeks 1, 2, 4, 6, 8 and 10, the therapist phoned each patient (about 18 min each time) to review progress, ask for ratings, give support and extra treatment advice, all as appropriate to the patients' assigned therapy [for *FF*: phobia diary, trigger setting, exposure goal setting, doing and problem solving with self-exposure; for *MA*: mood diary, slow deep breathing, healthy habits, progressive muscle relaxation, positive thinking (train to correct three negative thoughts with three positive ones), problem solving (find three reasons for a general problem; split one big problem into three smaller parts and work out how to solve each part on its own) and healthy habits]. *MA* patients had no instructions about exposure or phobic behaviour or thoughts; when a few

patients asked about exposure, the clinician neither encouraged them to do it nor dissuaded them from doing it.

At each of the 6 support calls, the therapist asked all patients to rate the main problem and main goal which had been set before treatment, time spent on the net-accessed system and on doing homework, and recorded call duration.

The two therapists who screened and supported patients (*A.J.S.*, *M.B.*) were psychiatrists experienced in CBT who spoke English as a second language.

Rating Times, Measures and Raters

Ratings were done at weeks 0, 10 and 14 (table 1) on valid reliable measures [10] used in past RCTs [11, 12]. Higher scores denoted more pathology.

Primary measures were: assessor ratings and self-ratings of main problem and goals (score range 0–8) [10], the global phobia item of the FQ (score range 0–8) [13] and global impression (score range 0–6, 0 = very much better, 3 = unchanged, 6 = very much worse).

Secondary measures were work/social adjustment (WSA; total score range 0–40) [14, 15] and patient satisfaction at week 10 (0 = very dissatisfied, 8 = very satisfied). At week 0, patients estimated how many minutes a day they were willing to spend on homework tasks.

The independent assessor (*D.M.-C.*) was an experienced psychologist blinded to the treatment condition and not involved in treatment. He rated the FQ main problem, main goal, the FQ global phobia and WSA. At the end of the treatment, patients rated satisfaction with treatment, kind of phone support needed, problems communicating with the therapist, emotional contact with the therapist and their therapist's competence, and the assessor tried to guess the patient's treatment condition.

Statistical Analyses

Before treatment, analyses of variance (ANOVA) or Mann-Whitney U tested for between-group comparisons (*FF* vs. *MA*, completers vs. drop-outs, phobia types) on demographic and clinical features, and χ^2 tests on categorical variables.

Intention-to-treat outcome analysed all randomised patients in the group to which they were originally randomised [16]. Where

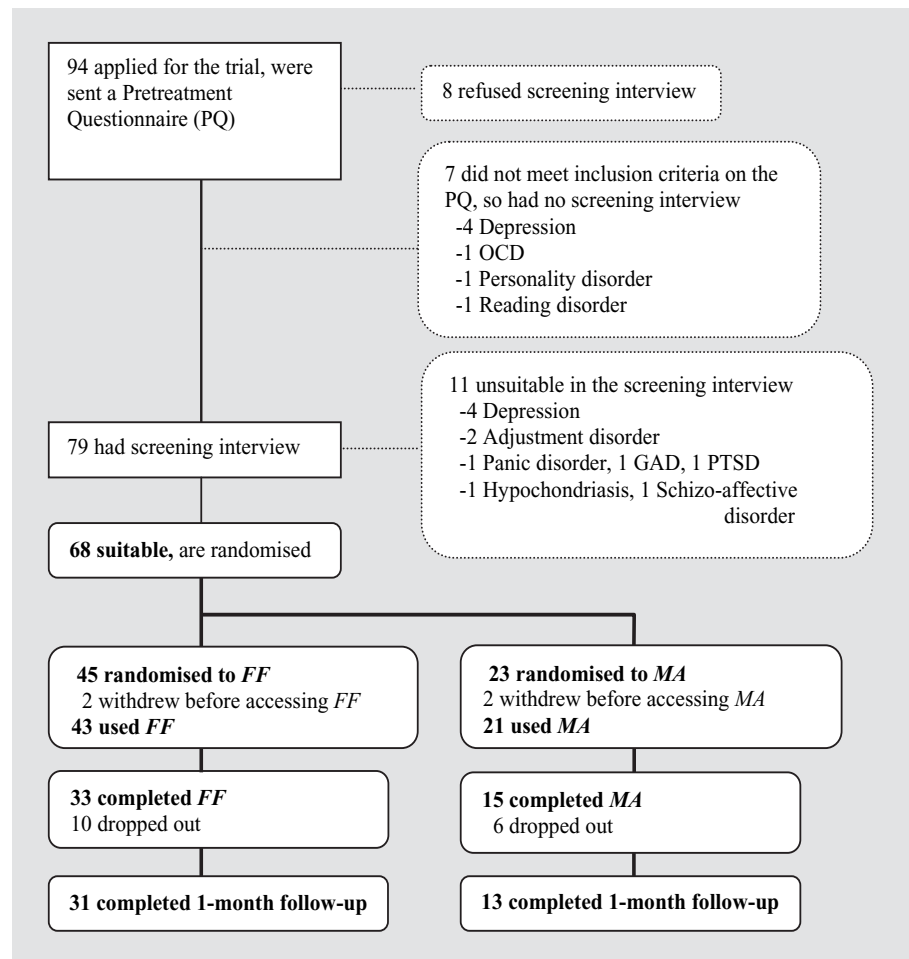


Fig. 1. Consort diagram of patient flow. OCD = Obsessive-compulsive disorder; GAD = general anxiety disorder; PTSD = posttraumatic stress disorder.

postbaseline data were unavailable, baseline data were not carried forward in the manner often done, as it is unlikely that scores remained frozen at their last observed value [17].

Treatment and interaction effects were tested by mixed-model multivariate ANOVAs (MANOVAS) with two between-group factors (treatment condition and phobia type) and one within-subject factor of 2 (pre- and post-treatment) or 3 (plus 1-month follow-up) occasions. On analyses of more than 2 occasions, pretreatment scores were used as covariates (MANCOVA).

Cohen's kappa tested accuracy of the blinded assessor's guess of the patient's treatment group. All tests were 2-sided and the p value was set at 5%.

Results

Patient Flow

Figure 1 (consort diagram) shows the progress of 94 referrals who sent a PQ and a signed consent form to a self-help clinic. They lived in London (n = 22), the rest of

England (n = 65), Wales (n = 5), USA (n = 1) or Canada (n = 1). Of the 94 referrals, 27 were from a mental health professional and 2 from a general practitioner (GP); 29 learned about the trial from the internet and 16 from magazine ads; 20 did not say how they learned about the trial.

Of the 94 referrals, 7 did not meet the inclusion criteria and had no telephone screening interview. Of the 87 patients offered an interview, 8 refused it and at interview 11 were unsuitable.

The 68 patients suitable at telephone interview were randomised, stratifying for phobia type (agoraphobia, social and specific phobia), in a 2 *FF*:1 *MA* ratio to *FF* (n = 45) or to *MA* (n = 23). The clinic wrote to the GP that their patient had entered the trial if patients consented to this letter (n = 62; 3 refused and 3 gave wrong GP details).

Patients said the sites they would use for internet access to their assigned system were: home (n = 59), office (n = 11), library (n = 5), internet cafe (n = 7), family/friends (not home; n = 7), clinic (not the self-help clinic; n = 2); 53 at only 1 site and 15 at more than 1 site. None accessed the internet at the self-help clinic and none saw their therapist or rater.

The 10 weeks of treatment and ratings at week 10 were completed by 33 *FF* and 15 *MA* patients, of whom 31 *FF* and 13 *MA* patients returned self-ratings at week 14 (1-month follow-up).

Pretreatment Features of the Sample

Numbers with each primary ICD-10 diagnosis were (and numbers with each secondary diagnosis in italics in brackets were): 25 (13*FF*, 12*MA*) (11) agoraphobia with, and 2 (2*FF*, 0*MA*) (4) without, panic; 24 (16*FF*, 8*MA*) (13) social phobia; 17 (14*FF*, 3*MA*) (6) specific phobia; (9) depressive disorder; (7) adjustment disorder; (2) substance abuse; (1) OCD. They learned about the trial from: 27 internet, 18 community mental health centre, 14 newspaper, 4 outpatient clinic, 2 general practitioner, 3 not known.

At week 0, the *FF* and *MA* groups did not differ significantly (ANOVA) on any demographic or clinical feature or outcome measure. Of the 68 randomised patients, 50 were women (74%), with a mean age of 39 (SD = 11) and a mean problem duration of 14 years (SD = 13); 35 were married/cohabiting and 33 were single; mean number of years of education was 12 (SD = 2) and mean time away from work over the past 3 months due to the problem was 17 days (SD = 33). At screening, 19 were on an SSRI drug, 6 on another antidepressant, 9 on a sedative, 6 on a beta-blocker and 2 on an antipsychotic.

At week 0, the whole randomised sample was moderate to markedly severe and 17% said they were housebound due to agoraphobia. Means \pm SD were: main problem 7.0 \pm 1.2; main goal discomfort 7.3 \pm 1.2; FQ global phobia 6.1 \pm 1.5; FQ main phobia 7.2 \pm 1.5; FQ total phobia 48 \pm 30; FQ single-item depression 4.3 \pm 2.4; FQ anxiety/depression 25 \pm 11, and WSA 21 \pm 11.

At week 0, compared to the agora/social phobics, the specific phobics were similarly severe on the self-rated main problem, main goal and FQ global phobia, but were less severe on the self-rated FQ total phobia, FQ anxiety/depression, WSA total, assessor-rated main problem, FQ global phobia and WSA total (all $p < 0.002$) and self-rated FQ 1-item depression ($p < 0.03$).

Drop-Outs

Of the 68 randomised patients, 20 (29%) dropped out before treatment ended at week 10: 4 (2 *FF*, 2 *MA*) after screening, 5 (4 *FF*, 1 *MA*) after week 1, 7 (3 *FF*, 4 *MA*) after week 2, 1 (*MA*) after week 5 and 3 (*FF*) after week 6. The drop-out rate was comparable across *FF* vs. *MA* (27 vs. 35%), phobia type (9% agoraphobia, 13% social phobia, 7% specific phobia) and the 2 supporting clinicians.

FF and *MA* patients gave similar reasons for dropping out: 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); 4 drop-outs were uncontactable. At week 0, the 20 drop-outs had been (non-significantly) less severe than completers on most ratings and significantly less severe on main phobia (FQ item 1; 6.6, SD 1.7 vs. 7.6, SD 0.7; $F = 11.4$, d.f. = 1, 61, $p < 0.002$).

Outcome

Table 2 shows, for self-ratings and blinded assessor ratings: (a) means and SDs; (b) percent improvement from pre- to post-treatment (weeks 0–10) and from pre-treatment to 1-month follow-up (weeks 0–14); (c) mean difference and 95% confidence intervals (CIs), and (d) within-group effect sizes.

On the MANOVA from weeks 0–10, *FF* and *MA* patients did not differ significantly on the amount of improvement (all interaction effects, $p > 0.3$). However, the 2 groups together (*FF* and *MA*) improved significantly on every measure (all $p < 0.01$).

At week 14, data of 44 (91%) patients were available (31 *FF*, 13 *MA*). On a MANCOVA from weeks 10 to 14 covarying for week 0 scores, *FF* patients improved significantly more than *MA* patients on 5 out of 10 scales and tended to do so on a 6th scale (fig. 2), group \times occasion interaction effects being: (1) for self-ratings: main problem (primary measure; $F = 4.16$, d.f. = 1, 41; $p = 0.048$); WSA total ($F = 6.17$, d.f. = 1, 41; $p = 0.017$); FQ agoraphobia subscore ($F = 4.32$, d.f. = 1, 41; $p = 0.044$); FQ anxiety/depression subscore ($F = 2.918$, d.f. = 1, 40, $p = 0.095$) and (2) for assessor ratings: main problem (primary measure; $F = 9.31$, d.f. = 1, 42; $p = 0.004$) and FQ global phobia ($F = 7.95$, d.f. = 1, 42, $p = 0.007$). This reflected *FF* patients slightly increasing, and *MA* patients slightly losing, gains during weeks 10–14 on those measures.

At week 14, standardised effect sizes comparing the two treatments were calculated for the main outcome

Table 2. Outcome ratings on each occasion

	Score range	Week 0 (pre-treatment)		Week 10 (post-treatment)		Week 14 (1 mfu)		Weeks 0–10 difference ¹		Weeks 0–14 difference ¹		Weeks 0–10 percent improvement ²		Weeks 0–14 percent improvement ²		Weeks 0–10 effect size ³	Weeks 0–14 effect size ³
		mean	SD	mean	SD	mean	SD	mean	95% CI	mean	95% CI	mean	SD	mean	SD		
<i>FF: self-rating</i>																	
Main problem (primary measure)	0–8	7.0	1.2	4.7	2.0	4.1	2.1	2.3***	1.6–3.0	2.9***	2.1–3.6	33	29	41	28	1.9	2.4
Main goal (primary measure)	0–8	7.0	1.2	4.5	2.4	4.2	2.2	2.5***	1.6–3.5	2.9***	2.0–3.8	34	39	40	34	2.1	2.4
FQ global phobia	0–8	6.3	1.4														
FQ main phobia	0–8	7.6	0.7	5.0	2.4	4.1	2.2	2.6***	1.6–3.5	3.6***	2.8–4.4	35	29	47	28	3.7	5.1
FQ total phobia	0–120	48	34	35	26	29	25	13.3***	6.5–20.0	17.5***	9.0–26.1	27	36	33	47	0.4	0.5
FQ anxiety/depression total	0–48	26	12	15	11	11	10	11.5***	8.0–14.9	15.1***	11.2–19.1	44	31	60	32	0.9	1.2
WSA total	0–40	23	11	15	10	12	9.8	7.3***	5.0–9.7	9.9***	7.0–12.9	33	29	47	31	0.7	0.9
<i>FF: assessor rating</i>																	
Main problem (primary measure)	0–8	6.0	1.4	4.0	2.1	3.6	2.1	2.0***	1.4–2.5	2.3***	1.7–3.0	35	31	40	29	1.4	1.6
Main goal (primary measure)	0–8	7.6	0.9	4.5	2.8	4.3	2.8	3.1***	2.1–4.1	3.3***	2.2–4.4	41	35	42	40	3.4	3.7
FQ global phobia	0–8	6.0	1.4	4.0	2.1	3.5	2.1	2.0***	1.4–2.5	2.4***	1.8–3.1	35	30	42	30	1.4	1.7
Global impression (primary measure)	0–6	–	–	1.7	1.0	1.6	1.1	–	–	–	–	–	–	–	–	–	–
WSA total	0–40	17	9.2	11.2	9.0	11.0	9.7	6.1***	3.7–8.6	6.4***	3.5–9.2	41	39	42	45	0.7	0.7
<i>MA: self-rating</i>																	
Main problem (primary measure)	0–8	7.2	1.4	4.9	2.0	4.9	1.7	2.3***	1.4–3.3	2.2***	1.4–2.9	32	24	31	21	1.6	1.6
Main goal (primary measure)	0–8	7.3	1.6	4.8	2.0	5	1.9	2.5***	1.4–3.5	3.0***	1.9–4.1	34	25	40	21	1.6	1.9
FQ global phobia	0–8	6.3	1.5	–	–	–	–	–	–	–	–	–	–	–	–	–	–
FQ main phobia	0–8	7.6	0.7	5.2	2.5	4.2	2.2	2.4*	0.2–4.6	3.6**	1.7–5.4	29	41	45	28	3.4	5.1
FQ total phobia	0–120	59	29	40	22	45	25	19.4*	5.0–33.7	18.2**	6.8–29.5	28	31	32	30	0.7	0.5
FQ anxiety/depression total	0–48	28	11	20	12	21	12	7.3*	0.6–13.9	6.8*	–0.7–14.4	20	50	15	55	0.8	0.7
WSA total	0–40	21	10	12	9.1	15	11	7.6***	4.3–10.9	6.3**	1.9–10.7	43	25	35	35	0.8	0.6
<i>MA: assessor rating</i>																	
Main problem (primary measure)	0–8	6.9	1.0	4.9	1.9	5.4	2.2	1.9***	1.0–2.9	1.5**	0.5–2.5	29	26	23	29	1.9	1.5
Main goal (primary measure)	0–8	7.7	0.7	5.0	2.5	5.7	2.5	2.6**	1.2–4.1	1.9**	0.6–3.3	34	34	25	34	3.7	2.7
FQ global phobia	0–8	6.9	1.0	4.9	1.9	5.3	2.2	1.9***	1.0–2.9	1.6**	0.6–2.6	29	26	24	29	1.9	1.6
Global impression (primary measure)	0–6	–	–	2.3	1.0	2.1	1.1	–	–	–	–	–	–	–	–	–	–
WSA total	0–40	20	8.4	14	9.8	14	10	5.6**	2.3–9.0	5.2**	1.6–8.9	30	36	28	43	0.7	0.6

1 mfu = 1-month follow-up. Lower scores indicate more improved (but the reverse for global impression). *FF*: n = 33, week 0; n = 31–33, week 10; n = 31, week 14. *MA*: n = 15, week 0; n = 14–15, week 10; n = 13–14, week 14. Smaller number of *FF* and *MA* patients for FQ main phobia at weeks 10 and 14.

¹ Significance of change on 2-tailed related t test: * p < 0.1; ** p < 0.05; *** p < 0.01; **** p < 0.001.

² Formula: (pretreatment mean – post-treatment mean)/pretreatment mean × 100.

³ Formula: (pretreatment mean – post-treatment mean)/pretreatment SD; 0.8 upwards usually regarded as clinically significant.

measures using Cohen’s d statistic (mean_{FF} – mean_{MA}/σ_{pooled}; where σ_{pooled} = square root of the mean of squared standard deviations): (1) for the self-ratings: main problem = 0.4; main goal = 0.1; FQ main phobia = 0.0; FQ total phobia = 0.6; FQ agoraphobia = 0.7; FQ anxiety/depression = 0.9, and WSA total = 0.3; (2) for the assessor ratings: main problem = 0.8; main goal = 0.5; FQ global phobia = 0.8, and WSA total = 0.3. On these effect sizes, *FF* thus had a medium to large advantage over *MA* on 5 of 10 measures at follow-up.

All three major phobia types improved significantly (p < 0.01) with a trend for agoraphobics to improve significantly more than specific phobics.

Clinician Time Spent on Phone to Patients

The therapists spent 40 min on the telephone screening interview. Excluding screening time, their mean ± SD time spent per patient supporting and rating patients by phone totalled: (a) during treatment weeks 0–10: *FF* 115 ± 44 min, *MA* 87 ± 28 min, F(1, 46) = 5.0, p = 0.03;

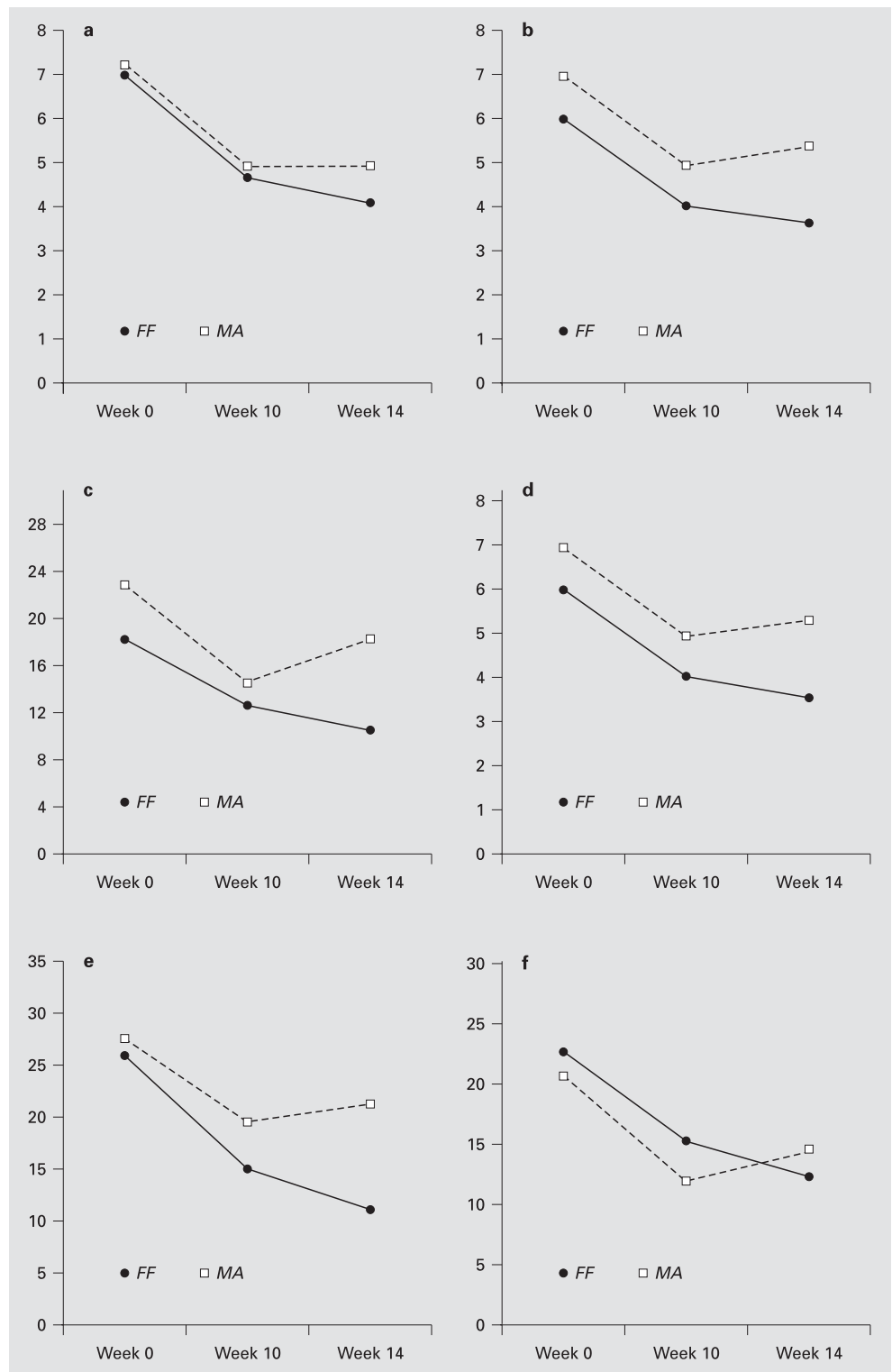


Fig. 2. Mean outcome scores on 6 measures where *FF* was superior to *MA* at week 14. **a** Main problem (self-rating). **b** Main problem (assessor rating). **c** FQ agoraphobia score (self-rating; 5 items; score range 0–40). **d** Global phobia (assessor rating). **e** FQ anxiety/depression (self-rating; items 18–23; score range 0–48). **f** WSA total (self-rating; 5 items; score range 0–40).

of this time, 80% were spent giving support, 17% obtaining ratings and 3% giving technical advice; support time did not correlate significantly with improvement or with type of phobia; numbers of treatment sessions were the same for *FF* and *MA* patients (5.9 ± 0.4 vs. 5.7 ± 1.0); *FF* patients spent non-significantly more time than *MA* patients doing homework over the 10 weeks (44 ± 43 h vs. 29 ± 58 h); the three phobia types had a similar duration of clinician support; small differences in duration of therapist contact remained non-significant throughout follow-up, (b) during follow-up weeks 10–14: 10 ± 8 min for *FF* and for *MA*.

Rater Blindness

During rating interviews, the treatment group was inadvertently revealed to the rater by 1 patient at week 0, 6 patients at week 10 and 4 patients at week 14. Excluding those, the blinded rater's guesses as to the patient's treatment condition were no better than chance at weeks 0 ($\kappa = 0.12$, $p = 0.22$) and 10 ($\kappa = -0.02$, $p = 0.81$) but slightly better than chance at week 14 ($\kappa = -0.3$, $p = 0.026$).

Satisfaction and Other Measures

After treatment, self-rated and assessor-rated satisfaction (0 = very dissatisfied, 8 = very satisfied) did not differ significantly among the three types of phobics or between *FF* and *MA*, though *FF* patients and social phobics tended to be more satisfied (self-rated *FF* 5.5 ± 2.4 vs. *MA* 4.6 ± 2.1 ; assessor-rated *FF* 6.2 ± 1.6 vs. *MA* 4.9 ± 2.1). Satisfaction correlated positively with outcome of the main problem after treatment ($r = 0.47$, $p = 0.001$) and at 1-month follow-up ($r = 0.45$, $p = 0.002$).

FF and *MA* patients did not differ significantly on self-ratings of the therapist's competence (*FF* + *MA*: 7.3 ± 0.8) and of the emotional contact with the therapist (*FF* + *MA*: 6.7 ± 1.4), each measured on a scale from 0 to 8.

The two therapists did not differ significantly on patient outcome or on self-rated satisfaction and emotional contact with and competence of the therapist.

Discussion

The 29% drop-out rate accords with that in many CBT studies: 38% in social phobia [18], 38% in agoraphobia/panic [19]; 29% in phobias [20]; 24–26% in phobias and other anxiety disorders [21, 22] and in social phobias and

other dysfunctions [23, 24], but is higher than in some other studies.

With net-guided self-help at home on the net, both groups had similar completion and significant improvement rates after 10 treatment weeks. At week 14 (1-month follow-up), improvement was significantly greater on 5 of 10 measures if the self-help guidance had concerned self-exposure (*FF*) rather than minimal CBT excluding exposure instructions (*MA*), and standardised effect sizes (Cohen's d) showed a moderate to large advantage of *FF* over *MA* on 5 measures.

Comparison of Present with Previous Studies

Both groups' similar improvement to week 10 seems more than a placebo effect as they improved 2–3 times more than similar patients did with a relaxation placebo in two past RCTs [4, 11]. To try to tease out the therapy components beyond those of a placebo, we made a non-randomised comparison of the present and two previous trials of *FF* which used similar ratings and entry criteria.

In the comparison below, $FF_{net} = FF$ used on the net mostly at home; $FF_{sa} = FF$ used on a stand-alone computer in a clinic; $MA_{net} = MA$ used on the net mostly at home; RE_{sa} = relaxation guided on a stand-alone computer in a clinic. A therapist gave live brief advice on a helpline for net patients and face-to-face for *sa* patients (details are available from the corresponding author on request).

(1) Improvement with exposure guided by FF_{net} was similar in the present RCT to that in a pilot study [7] of FF_{net} and another of FF_{sa} [6].

(2) The exposure group had fewer drop-outs in the present than the previous RCT [4] (FF_{net} vs. FF_{sa}) but the present non-exposure CBT group had more drop-outs than the previous non-exposure relaxation group (MA_{net} vs. RE_{sa}). Drop-out rates were similar across the exposure and non-exposure groups in the present RCT, but higher in the exposure than the non-exposure group in the previous RCT.

(3) Compared to their counterparts in the previous RCT, present exposure patients improved less (FF_{net} vs. FF_{sa}) and present non-exposure patients improved unexpectedly more (MA_{net} vs. RE_{sa}).

(4) In both RCTs, patients set with a clinician a main problem and main goal and rated these, had computer-aided self-help with homework and diary keeping plus brief live helpline support from a clinician and the exposure group had guidance from the same computer system (*FF*).

(5) The two RCTs differed in ways that concerned both exposure and non-exposure. Present compared to previous patients [4] had: (a) more severe pathology; (b) setting of the main problem and main goal at post- rather than prerandomization; (c) self-help guidance on the net mainly at home rather than on a stand-alone computer in a clinic; (d) screening and live helpline support from a clinician by scheduled phone calls rather than face-to-face scheduled and on demand at a clinic (of the present patients, 48% rated therapist support just as good by phone as face-to-face, 21% as better and 31% as worse); (e) a longer screening interview; (f) clinician support over a mean of 6 rather than 4 contacts for a longer total time than before (excluding screening time: 115 min FF_{net} vs. 76 min FF_{sa} ; 87 min MA_{net} vs. 76 min RE_{sa}), and only in the present RCT did the clinician ask for problem/goal ratings at each contact. Factors a–f above do not explain why computer-guided gains were less in the present than the previous exposure group yet more in the present than the previous non-exposure group, unless those or other unknown factors acted differently on the exposure and the non-exposure groups.

(6) The present sample included more mental health professional referrals than in the previous RCT [4] (34 vs. 6%; $p < 0.001$). In another, open study [25], gains with computer-aided self-help were least among mental health professional referrals compared to GP and self-referrals. This might reflect mental health professional referrals having the severest phobia, disability and comorbidity and helps explain why FF_{net} improved less than FF_{sa} [4]. The greater gains with MA_{net} than with RE_{sa} might reflect MA_{net} giving more interaction and CBT (non-exposure) advice than RE_{sa} did.

(7) Net access limitations at the time of the RCT perhaps impeded work more with FF_{net} than with the simpler MA_{net} system.

(8) Unlike therapists in the previous RCT, present therapists were not trained to support FF users and only supported them in scheduled phone calls. Moreover, technical computer help was available immediately from the therapist with FF_{sa} but often after a delay of up to 24 h from a technical expert with FF_{net} , which may have lowered motivation to complete FF_{net} . Nevertheless, fewer patients dropped out from FF_{net} than from FF_{sa} [4], hinting, too, perhaps, that FF_{net} clients were less encouraged to do exposure rapidly up a hierarchy than FF_{sa} patients were, with ensuing gains taking longer to become as great as in FF_{sa} . Moreover, though present therapists could ask on the phone about exposure homework done, they could not see tighter evidence in written homework diaries.

(9) Previous patients [4] attended a clinic to use the self-help systems and had immediate brief feedback about homework done and planned. In contrast, present patients had a delay from the time they accessed FF_{net} to the time they had helpline feedback about progress; this could have lowered motivation, quality of homework and speed of improvement.

(10) Non-exposure management of anxiety (MA_{net}) turned out to be too active to be a placebo. Unlike the previous non-exposure group (RE_{sa}) [4], MA_{net} encouraged not only relaxation and deep, slow, diaphragmatic breathing, but also regular exercise with physical health goals, problem-solving, positive thinking, finding a helper, activities to promote the foregoing and (as with FF_{net}) ratings of the main problem and main goal on 7 more occasions than with RE_{sa} – with the assessor at week 0, and with the clinician at each of the 6 phone support sessions over 10 weeks. MA_{net} may thus have motivated more self-help than RE_{sa} did. The higher drop-out rate with MA_{net} than RE_{sa} hints that the more the patients are asked to do homework and to attend treatment with face-to-face monitoring the more they may be likely to drop out.

Blindedness of the Assessor

It is unclear why the assessor's guesses of the patient's treatment condition were at chance level at weeks 0 and 10 but marginally better than chance at week 14. The superiority of FF over MA at week 14 also appeared on self-ratings and so is unlikely to merely reflect the assessor's unblinding. There is no evidence that the assessor influenced self-ratings.

Implications

At the end of 10 treatment weeks, phobia/panic sufferers improved without attending a clinic by doing CBT self-help guided mainly at home using either of two internet systems, together with brief screening and therapist support by phone. At 1-month follow-up, if the self-help instructions had concerned exposure, gains were significantly greater on 5 of 10 measures and effect sizes for exposure's superiority were moderate to large on 5 measures.

The unexpected short-term improvement with non-exposure CBT in the present study accords with other RCT findings that anxiety disorders benefited from certain non-exposure instructions, e.g. problem solving and cognitive restructuring [8] that were also contained in the present non-exposure group. In a further RCT [26], computer-aided self-exposure and therapist-guided non-exposure like that in the present RCT improved flying pho-

bia similarly after treatment though some gains from exposure were slightly but non-significantly greater at 6-month follow-up.

None of the present patients saw a clinician in person. Referrals posted their completed screening questionnaire to a clinic and had a screening interview, subsequent brief support and ratings all by phone. By delegating routine aspects of therapy to computer-aided self-help at home via the net or a phone with interactive voice response [27, 28], therapists markedly raised the number of clients they could treat effectively per week. Computer-aided self-help is a clinician extender, not replacer; the clinician still screens and supports the patient.

The self-help clinic posted screening questionnaires and ratings to enquirers, received completed questionnaires and ratings by post and was a phone base. After its funding stopped, it closed physically near the end of the RCT, after which staff's support and ratings were made by phone from elsewhere (A.J.S. did some from Switzerland). By then, the clinic had become virtual. One way of organising computer-aided self-help is to have a small administrative base with a few facilitators sharing experiences there and supporting many computer-using patients who phone for advice from elsewhere. Per-patient CBT cost can drop greatly if enough patients do computer-aided self-help [6].

A health care professional background may not be essential to screen and support computer-aided self-help. It might suffice for empathic facilitators to spend a few days as a 'pretend' patient completing computer-aided self-help and learning to answer the most common questions put by users.

Therapist time to screen and then support *FF* patients was about 25% of most therapists' time spent in screening and guiding phobia/panic patients in face-to-face exposure therapy. Two present patients had support by e-mail rather than by phone, which took longer and was less personal. Therapist screening time could be cut by modifying the screening questionnaire [29] and omitting research as opposed to service questions.

Limitations

A larger *MA* sample would have been desirable. There was no randomised comparison of net- vs. clinic-accessed computer-aided self-help that was otherwise identical (constrained to patients who could travel to a clinic despite having net access and a phone). Longer follow-up would have been desirable, but at week 14 unimproved cases were offered other treatment as *MA* had been expected to be ineffective even in the short term.

The design did not allow dissection of what yielded short-term gains in non-exposure management, nor can we know how much improvement reflected the computer-guided self-help at home, the homework and type of homework patients did and their brief live helpline support. Also unknown is whether similar gains might have been obtained by book guidance at home plus live helpline support.

Conclusions

Therapists effectively delegated routine aspects of self-exposure therapy for phobia/panic to net-accessed computer guidance at home with brief live support on a helpline. Net-accessed non-exposure therapy at home had a shorter-term effect and the ingredients producing that deserve to be identified.

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