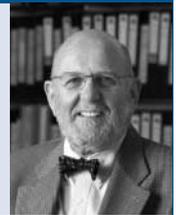


Editorial

Utility of computerised cognitive–behavioural therapy for depression†

Gavin Andrews

**Summary**

A recent study found that people with depression identified in the community recovered equally well given unsupported computerised cognitive–behavioural therapy (CBT), general practitioner treatment or a combination of the two, even if they did not comply. The results are different from those reported elsewhere. Could natural remission explain the finding?

Declaration of interest

G.A.'s group has developed a computerised CBT system. It is a not-for-profit operation owned by St Vincent's Hospital, Sydney, Australia.

Gavin Andrews is Professor of Psychiatry at the University of New South Wales at St Vincent's Hospital, Sydney, Australia. He is Director of the Clinical Research Unit for Anxiety and Depression, which developed the internet therapy.

There is excitement about the promise of internet therapy for people with the common mental disorders. In recent studies, benefit, adherence and satisfaction are all high and comparable with good face-to-face treatment. To potential patients, effective internet treatment offers the advantages of being able to access treatment at a convenient time that does not necessitate taking time off work; being able to work at one's own pace to master the material; reduced expense – for even in a system in which face-to-face treatment is free, travel to the clinic is expensive; and of course privacy and freedom from stigma. The principal advantage is that one could learn strategies to get well and stay well.

This editorial seeks to understand the results in two papers published in the *Journal*.^{1,2} In a study to determine the clinical effectiveness of online unsupported computerised cognitive–behavioural therapy (CCBT) for depression, de Graaf *et al* sent a population sample of 218 000 an invitation to complete an online depression screening questionnaire.¹ The 1190 persons who replied and scored over 15 on the Beck Depression Inventory II were invited to visit the research centre; 417 were assessed, of whom 303 met trial criteria and agreed to be randomised to eight sessions of unguided CCBT, to treatment as usual by their general practitioner (GP) or to CCBT plus GP treatment. Treatment adherence was low, with only 36% of the CCBT group completing five or more sessions, 31% of the GP care group having four or more consultations or taking an antidepressant, and 12% of the CCBT plus GP care group meeting both these minimal criteria for effective treatment. At 6-month follow-up, when data were obtained from 90% of participants, all three groups had improved substantially (within-group mean standardised difference or effect sizes were 0.86, 0.81 and 0.89 respectively) and improvement was independent of treatment type or degree of adherence to treatment. The authors regretted that online unsupported CCBT did not outperform usual care. In a subsequent paper (this issue),² the costs incurred by the CCBT group in the 12-month period from baseline assessment were compared with the costs incurred

by the other two groups. Across the three groups, about 80% of the costs incurred were associated with workforce participation, almost all due to estimates of presenteeism (being at work but not productive), and less than 15% associated with savings in the direct cost of healthcare. Direct treatment costs were 25% lower and lost productivity was 15% lower in the CCBT group compared with the GP group. As all groups had made equal progress, it was concluded that CCBT was 15% more cost-effective than the other two conditions.

An average within-group improvement of effect size 0.85 in depression scores is substantial. That it was not associated with treatment type or adherence to treatment raises the serious possibility that other factors were responsible for the improvement. As there was no waiting-list control group or placebo group, neither the effects of natural remission nor placebo response could be separated from response to the specific treatments. If there was no association between improvement and treatment, then the small difference in costs seen in the CCBT group might not necessarily be related to type of treatment.

Comparison with other studies

Comparison with the Beating the Blues study is instructive.³ In this programme participants were recruited from general practice – that is, they were seeking treatment. The 274 participants were randomly allocated to CCBT or GP treatment. None was allocated to a waiting-list control group so no estimate of the effects of natural remission could be made. Patients in the CCBT group came weekly to the practice for eight CCBT lessons. They were supported by a practice nurse but little clinical advice was offered. Again, both groups made significant advances over the 8-month follow-up period (within-group effect sizes GP 1.1, CCBT 1.44) but the between-group superiority was significant (effect size 0.56) so type of treatment did matter. In a cost-effectiveness study that covered similar areas to the Dutch study, CCBT was substantially more cost-effective than GP care, and again the most important contribution was from the change in workforce participation with CCBT and not just due to reduced service use.⁴

A recent meta-analysis of internet-based and other computerised psychological treatment randomised controlled trials for adult depression identified 12 studies.⁵ All the participants were volunteers seeking treatment. The mean superiority of the intervention groups over the control groups at post-treatment assessment (effect size) was 0.41. Three studies that

†See pp. 310–318, this issue.

compared face-to-face CBT with CCBT showed CCBT to be equally effective. There was a significant difference between the eight studies that provided concurrent professional advice and support over the web (mean between-group effect size 0.61) and the seven studies that did not provide support (mean between-group effect size 0.25). The mean effect size in the control groups was of the order of 0.4; so, as effect sizes are normally additive, the within-group effect sizes for professional support would be of the order of 1.1 and without support would be 0.65.

The de Graaf study did not provide professional support to the CCBT group. It had no control group but generated a within-group effect size of 0.86 in the CCBT group, greater than would be expected from unsupported CCBT (0.25) adjusted for the control group change in the meta-analysis results in the previous paragraph (effect size $0.25 + 0.4 = 0.65$).⁵ Furthermore, in the de Graaf study the effect size change in the CCBT group was independent of the number of treatment sessions completed, and similar benefit and independence from the number of sessions were seen in the GP-treated group and in the CCBT plus GP treatment group, as though some general improvement process was occurring in these people. The de Graaf study participants were identified from a normal community sample and many of those recruited might not ever have sought treatment. The mean duration of a depression episode is some 6 months and treatment-seeking is associated with chronicity.⁶ One possible explanation for the degree of response in the de Graaf study could be that these people recovered when assessed at 6 months because that was the natural history of their condition. The existence of a waiting-list control group would have clarified this issue.

Benefits of internet therapy

It is not surprising that people with established anxiety and depressive disorders volunteer for treatment. In many programmes adherence to internet therapy is higher than adherence to most face-to-face therapies, an indication of patient satisfaction.⁷ To providers and health services, the potential gains are equally obvious. The fidelity of the treatment process is embedded in the programme and concerns about probity of delivery are no longer an issue. Services are preoccupied with the cost of direct healthcare. In most internet programmes staff support can be reduced to little more than an hour per patient once the diagnosis and treatment induction have been completed, and, provided clinical back-up is available, clinical sophistication is not so necessary. Internet treatment is the ideal first stage in a stepped-care design.

The field is burgeoning and space limitations preclude a systematic review. Let me outline our procedure, which is not atypical. We used the manuals in our textbook as the basis for the internet programmes.⁸ Each programme has six to eight lessons that comprise brief assessment scales, an illustrated story of a person recovering with this treatment, and homework and other supportive materials. In our website (www.virtualclinic.org.au) we screen volunteers from the population with questionnaires and confirm their diagnosis and suitability with a telephone interview. We have automated reminders to keep people motivated during the programme, and have set 75% adherence and superiority over a control group of effect size >0.8 as minimum standards. In social phobia, generalised anxiety

disorder and depression we have completed trials that show we can meet these standards using weekly 5-min telephone calls from a non-clinician.⁹ In the present state of development, adherence and benefit both decline if we fully automate the procedure or include people with different diagnoses in the same programme (for a list of published trials see <http://crufadclinic.org/index.php/what-our-research-says>). At the Clinical Research Unit for Anxiety and Depression at St Vincent's Hospital we are systematically rolling out these programmes to divisions of general practice throughout Australia and are now using the programmes in a stepped-care design in our own tertiary referral face-to-face clinic. To date, in cases treated over the internet the person is more distressed and disabled than in cases derived from general population samples. Most of these people have an extensive history of depression and, because of the chronicity, seem unlikely to recover without treatment. We see very little change in the waiting-list control groups in the 4–5 months until their treatment starts.

The study by de Graaf *et al* aimed to identify and treat cases in the general population and calculate the population impact of doing this over the subsequent year.^{1,2} It was an ambitious and well-designed study that deserved to succeed. We all will learn from these researchers' experience.

Gavin Andrews, AO, MD, FRCPsych, University of New South Wales at St Vincent's Hospital, 390 Victoria Street, Darlinghurst, NSW 2010, Australia.
Email: gavina@unsw.edu.au

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