Cost-effectiveness of therapist-delivered online cognitive-behavioural therapy for depression: randomised controlled trial
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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

CRD summary
The objective was to determine the cost-effectiveness of online cognitive-behavioural therapy (CBT) compared with usual care. The authors concluded that online CBT delivered by a therapist in real time was likely to be cost-effective compared with usual care if society was willing to pay at least 20,000 UK pounds sterling per quality-adjusted life-year. The methods seemed appropriate and the reporting was clear and transparent. The conclusions reached by the authors appear to be appropriate.

Type of economic evaluation
Cost-effectiveness analysis, cost-utility analysis

Study objective
To determine the cost-effectiveness of therapist-delivered online cognitive-behavioural therapy (CBT) compared with usual care in depression.

Interventions
Therapist-delivered online CBT plus usual care was compared against usual care for primary care patients with depression who were on a waiting list for online CBT. Participants were offered up to 10 sessions of 55 minutes to be completed within four months of randomisation. Participants and therapists typed free text on the computer and messages were sent instantaneously. This was the only form of communication used.

Location/setting
UK/primary care.

Methods
Analytical approach:
The economic evaluation was conducted alongside a clinical study. The authors stated that the perspective was that of the UK NHS. The time frame was 12 months.

Effectiveness data:
The evidence came from a single randomised controlled trial (RCT). Two hundred and ninety-seven participants were recruited from 55 general practices in Bristol, London and Warwickshire between October 2005 and February 2008. Participants who were on an eight-month waiting list for online CBT were randomly distributed to an online CBT group (149) and a usual care group (148). Clinical outcomes were measured in terms of Beck depression inventory (BDI) score and recovery rate.

Monetary benefit and utility valuations:
The European Quality of life (EQ-5D) instrument was used at baseline and at four and eight months. Results were combined with UK population tariffs to derive quality-adjusted life-years (QALYs) for the health states.

Measure of benefit:
The summary measure of benefit was QALYs.

Cost data:
All health care resources were valued using unit costs derived from nationally available data sources: Health and Social Care 2007, national evaluations, Department of Health reference costs, the British National Formulary, and the Office of National Statistics. All costs were valued in UK pounds sterling (£) at 2007 prices, adjusted for inflation, where necessary. In addition to direct costs, the authors measured and presented productivity costs to enable use of the same analysis from a wider perspective.

Analysis of uncertainty:
Sensitivity analyses was used to investigate the effects of three areas of uncertainty regarding the cost and QALY estimates: the impact of missing data; misreporting of secondary care appointments; and the cost of therapy sessions. Bootstrapping was used to capture the uncertainty around the ratios. A cost-effectiveness acceptability curve was constructed to show the probability of the intervention being cost effective.

Results
Online CBT was more expensive than usual care: £645 (SD 337) versus £300 (SD 268), an incremental difference of £345 (95% CI 276 to 415).

Online CBT had better outcomes than usual care: 0.528 (SD 0.081) compared with 0.494 (SD 0.099) QALYs, an incremental difference of 0.034 (95% CI 0.014 to 0.055).

The incremental analysis on complete case data estimated a cost per QALY gain of £17,173. When missing data were imputed this was reduced to £10,083 per QALY. The cost per extra patient recovering (in terms of Beck depression inventory scores) was estimated as £3,528. The results were robust in the sensitivity analysis.

Authors' conclusions
Online CBT delivered by a therapist in real time was likely to be cost-effective compared with usual care if the willingness-to-pay threshold was at least £20,000 per QALY.

CRD commentary
Interventions:
The interventions compared in the study were well reported and adequately defined. It was unclear why online CBT was not considered as a comparator. Future research may be required to compare therapist-led online CBT with online CBT.

Effectiveness/benefits:
Reporting of the randomised controlled trial design was limited and it was necessary to refer to the main clinical paper to fully assess the validity of the trial. It appeared that the trial was well conducted and the results were likely to be valid. The methods use to derive benefit measures were reported transparently and followed the methodology advised by NICE.

Costs:
The costing was detailed. Despite the limitations of collecting resource use data, which were fully discussed by the authors, costings were well conducted and presented. All costs relevant to the perspective were considered and productivity costs were presented, which allowed a wider perspective to be considered. NHS resource use data was presented in detail and would aid generalisability to other settings. The costs were not discounted as the time frame for the study was 12 months.

Analysis and results:
The authors stated the resource use data as a weakness. On the impact of uncertainty, three different scenarios for the sensitivity analysis were discussed (effect of missing data, exclusion of a group to gauge the effect on the overall results and analysis of the maximum cost of therapy for a given cost per QALY) and explained well. The analysis was transparent and limitations and methods used to address them were presented.

Concluding remarks:
The methods were appropriate and the reporting was clear and transparent. The conclusions reached by the authors seem appropriate.
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