Cost-utility of brief psychological treatment for depression and anxiety
Hakkaart-van Roijen L, van Straten A, Al M, Rutten F, Donker M

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.

Health technology
The study compared three first-line treatments for depression and anxiety. The options were brief therapy, cognitive-behavioural therapy (CBT) and care as usual. Brief therapy consisted of a maximum of 7 sessions. CBT consisted of a maximum of 15 sessions. Care as usual was "matched care" according to the patient's type. The stepped-care approach was adopted for the first two treatment options, that is, all patients received one and the same form of care as first-line therapy and the treatment option was altered only in the case of no improvement or of side effects.

Type of intervention
Treatment.

Economic study type
Cost-utility analysis.

Study population
The study population comprised patients with DSM-IV diagnoses of major depressive disorder (single episode or recurrent), dysthymic disorder, panic disorder (with or without agoraphobia), social phobia, and generalised anxiety disorder. The patients were aged between 18 and 65 years, were eligible for outpatient mental health care and had not been treated in the same mental health care centre (MHC) during the previous year. Patients with psychotic or bipolar disorder, cognitive impairment, high suicide risk, poor command of the Dutch language, or hard drug misuse or dependence were excluded from the study. Patients with co-morbidity relating to further psychiatric diagnoses (excluding psychotic or bipolar disorders) such as personality disorders, alcohol misuse or dependence, and somatic disorders were included in the study.

Setting
The setting was MHCs (outpatient care). The economic study was carried out in the Netherlands.

Dates to which data relate
The effectiveness data and resource use data were collected from February 2000 until March 2003. The cost data were derived from sources published between 2000 and 2002. All costs were reported for the price year 2002.

Source of effectiveness data
The effectiveness data were derived from a single study.

Link between effectiveness and cost data
It appears that the costing has been carried out prospectively on the same sample of patients as that used in the effectiveness study.
Study sample
The final sample size was a little short of the estimated sample size required. Patient selection was completed in two steps. During the first stage, patients were screened according to the inclusion and exclusion criteria. During the second stage, patients underwent the Composite International Diagnostic Interview and those who met the DSM-IV diagnostic criteria for inclusion were selected for participation. It was reported that of the 6,095 patients in the initial sample, 1,995 (33%) patients refused to participate, 1,338 (22%) patients were excluded from the study (reasons not reported), another 1,257 (21%) patients did not meet the inclusion criteria and were subsequently excluded, while 803 (13%) were not included for specified reasons (e.g. unreachable due to false telephone number, on holiday). Overall, 702 patients were included in the study. There were 266 patients in the care as usual group, 232 in the CBT group and 204 in the brief therapy group.

Study design
The analysis was based on a multi-centre (7 MHCs) randomised trial. The method of randomisation was not reported. The patients were followed up every 3 months and the duration of follow-up was 1.5 years. Initially, data on resource use were available for 611 (87%) of the patients, while quality of life data and data from the Trimbos and iMTA Questionnaire on Costs Associated with Psychiatric Illness (TiC-P) were available for 646 (92%) of the patients. It was reported that data were available for 423 (60%) patients at the 1-year follow-up and 394 (56%) patients at the 1.5-year follow-up, but no reasons for withdrawals were provided.

Analysis of effectiveness
The analysis was conducted on an intention to treat basis. It was reported that the patient groups had comparable demographic and health status characteristics. Also, patients in the CBT group had a significantly lower mental health functioning than patients in the brief therapy group. The analysis also demonstrated that there were no statistically significant differences in demographic and health status characteristics between study participants and patients who were lost to follow-up. The primary outcome used in the analysis was health-related quality of life scores estimated using the Euro-Qol Questionnaire (EQ-5D).

Effectiveness results
The utility score at baseline was 0.51 in the care as usual group, 0.52 in the CBT group and 0.53 in the brief therapy group.

At the 1-year follow-up, the utility score was 0.64 in the care as usual group, 0.68 in the CBT group and 0.64 in the brief therapy group.

At the 1.5-year follow-up, the utility score was 0.69 in the care as usual group, 0.65 in the CBT group and 0.71 in the brief therapy group.

Clinical conclusions
The authors concluded that, at the end of the study period, the patients' utility scores were significantly lower compared with the average score in the general population. In addition, there were no statistically significant differences between the three treatment groups.

Measure of benefits used in the economic analysis
The authors used health utility (quality-adjusted life-years, QALYs) as the measure of benefit in the economic analysis. This was evaluated using the patients' values from the EQ-5D questionnaire.

Direct costs
The direct health service costs included in the analysis were for contacts with health care providers (e.g. general practitioner, psychiatrist, medical specialist, physiotherapist, alternative health practitioner), day care and
hospitalisation, and medications. The costs and the quantities were not reported separately. The costs were derived from published sources. The quantities of resources used were estimated using the TiC-P and were therefore based on actual data. Discounting was not relevant as the costs were incurred during a short time. All costs were reported for the price year 2002.

**Statistical analysis of costs**
The authors used the Monte Carlo Markov Chain method to assign missing values of costs and resources use, assuming a multivariate normal distribution. In addition, standard errors (SE) were estimated using a parametric and bootstrap method (non-parametric) approach.

**Indirect Costs**
The authors used the TiC-P questionnaire to estimate productivity losses according to the friction-cost method. Absenteeism from work was valued using the average production value by age and gender per day or per hour, but the source of the cost data was not reported. Discounting was not relevant as the costs were incurred during less than two years. The price year was 2002.

**Currency**
Euros (EUR).

**Sensitivity analysis**
The authors conducted sensitivity analyses using two different methods for imputing missing values. The methods used were linear extrapolation and complete case analysis. Under the linear extrapolation method, health service costs and costs due to short-term absenteeism from work were extrapolated to 1.5 years. In the complete case analysis, data on patients lost to follow-up before the end of the study period (1.5 years) were not included in the analysis.

**Estimated benefits used in the economic analysis**
The number of QALYs achieved at the end of the 1.5-year period was 0.91 (SE=0.03) in the care as usual group, 0.936 (SE=0.03) in the CBT group and 0.939 (SE=0.03) in the brief therapy group.

**Cost results**
The total costs per patient were EUR 9,511 in the care as usual group, EUR 9,748 in the CBT group and EUR 10,316 in the brief therapy group.

**Synthesis of costs and benefits**
An incremental cost-effectiveness analysis was performed. Accounting for the total costs, CBT had extended dominance over usual care. This means that CBT could produce the same number of QALYs as usual care at lower cost. When brief therapy was compared with CBT, it resulted in an incremental cost of EUR 222,956 per QALY gained.

Accounting only for direct medical costs, CBT was the dominant option as it incurred lower costs and better outcomes. When brief therapy was compared with CBT, it resulted in an incremental cost of EUR 262,857 per QALY gained.

The bootstrap analysis indicated that when accounting only for direct medical costs, CBT proved to be the optimal treatment option. However, if the threshold incremental cost-effectiveness ratio was increased, the domination of CBT became less robust.

The sensitivity analysis demonstrated the robustness of the baseline analysis of missing data. The complete case analysis, which included only 48% of the participants, showed similar results to those of the linear extrapolation analysis, but with larger SEs.
Authors' conclusions
The three treatment options did not differ significantly in terms of their cost-utility.

CRD COMMENTARY - Selection of comparators
Brief therapy appears to have been a newly established treatment option in the authors' setting, while CBT and care as usual represented standard practice. The care as usual option was not described in full detail. You should decide if these represent valid comparators in your own setting.

Validity of estimate of measure of effectiveness
The analysis was based on a multi-centre randomised trial, which was appropriate given the study question. The study sample was representative of the study population and the patient groups were shown to be comparable at analysis. Although the length of study and loss to follow-up were reported, the method of randomisation was not reported, making it difficult to comment on the internal validity of the study. It seems that a statistical analysis was undertaken to account for those patients lost to follow-up, but the results of the statistical test were not reported.

Validity of estimate of measure of benefit
The QALYs were derived using a valid tool. The authors adequately reported the methods used.

Validity of estimate of costs
The analysis of the costs was conducted from a societal perspective. As such, it appears that all the relevant categories of costs have been included in the analysis. Resource use was well assessed from the same trial that provided the effectiveness data. The sources of the unit costs were reported. The costing methods were well reported and were appropriate. An appropriate analysis of uncertainty was conducted.

Other issues
The authors compared their study findings with those of published studies and found them to be in agreement. The issue of the generalisability of the results to other settings was not directly addressed. The authors do not appear to have presented their results selectively, although they did not always report the results of the statistical tests performed. The study enrolled patients with mood and anxiety disorders and this was reflected in the authors' conclusions.

The authors reported a number of limitations to their study. First, their analysis did not account for the natural recovery of the patients. Second, the effectiveness of antidepressant medications was not clearly documented. Third, resource use due to depression and/or anxiety was not considered separately from the health care resource use associated with general health problems, and the cost estimates of medication might have been underestimated. However, the authors reported that these limitations applied to all treatment options. Finally, it was reported that productivity losses to society were underestimated since productivity losses arising from decreased efficiency at work were not accounted for because of methodological problems.

Implications of the study
The authors reported the following clinical implications:

"Care as usual ('matched care') was not more cost-effective than brief psychological therapy or cognitive-behavioural therapy ('stepped care')."

Brief psychological therapy may help to reduce the waiting lists of mental health care centres.

Brief psychological therapy reduces the costs of mental healthcare centres and may allow redistribution of resources to the group of patients who are ineffectively treated."
The discussion also highlighted areas where more information is needed.

**Source of funding**
Funded by ZonMw and SBWOGG.

**Bibliographic details**

**PubMedID**
16582058

**DOI**
10.1192/bjp.188.4.323

**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Adult; Anxiety Disorders /economics /therapy; Behavior Therapy /economics; Cognitive Therapy /economics; Cost-Benefit Analysis; Depressive Disorder /economics /therapy; Female; Health Care Costs; Humans; Male; Netherlands

**AccessionNumber**
22006000730

**Date bibliographic record published**
31/08/2006

**Date abstract record published**
31/08/2006