Cost-effectiveness of interpersonal psychotherapy for elderly primary care patients with major depression

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 health technology assessed was interpersonal psychotherapy (IPT) as a treatment for elderly patients suffering from major depression. Mental health workers in primary care practices delivered the IPT, which consisted of a maximum of 10 sessions. The comparator was the current practice (CP) of general practitioners.

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis and cost-utility analysis.

Study population
The study population comprised patients older than 55 years who were identified as suffering from major depression. The exclusion criteria were treatment for depression at the time of screening, insufficient understanding of the Dutch language, and impaired cognitive functioning.

Setting
The setting was primary care. The economic analysis was carried out in the Netherlands.

Dates to which data relate
The clinical and economic data were gathered between February 2002 and July 2003. The price year was 2003.

Link between effectiveness and cost data
The costing was carried out prospectively on the same sample of patients as that used in the analysis of effectiveness.

Study sample
Power calculations were used to determine the sample size in the planning phase of the study. It was estimated that 60 patients per group were needed to detect a difference in remission of 25%. Patients were recruited using a two-stage screening procedure, those who were diagnosed with major depression being eligible for the study (n=293). Of the 205 eligible patients, 143 agreed to participate in the trial, 69 being allocated to the IPT group and 74 to the CP group.

Study design
This was an RCT carried out in 12 general practices in Amsterdam and the surrounding area, in the Netherlands. Randomisation was performed by an independent research assistant at patient level using blocking by practice and a table of random numbers. The reader should refer to the clinical paper for full details of the trial (Schaik et al. 2004).
see ‘Other Publications of Related Interest’ below for bibliographic details). The length of the study was 12 months and no losses to follow-up were reported.

**Analysis of effectiveness**

The health outcomes used in the analysis were:

- remission of depression;
- response to treatment;
- changes in severity of depression;
- recovery from depression; and
- the quality-adjusted life-years (QALYs) gained.

The first three outcomes were measured by the Montgomery Asberg Depression Rating Scale (MADRS). Recovery from depression was defined as absence of a Primary Care Evaluation of Mental Disorders (PRIME-MD) diagnosis of major depression at 12 months. The QALYs gained were measured by EuroQol scores using Dutch and British tariffs. At baseline, the study groups were comparable in terms of their clinical factors. Values were obtained at baseline and 6 and 12 months. All analysis was performed on an intention to treat basis.

**Effectiveness results**

At 6 and 12 months, differences in remission and response rates based on the MADRS score were small and not statistically significant.

At 6 months of follow-up, 60% of IPT patients and 42% of the CP patients had recovered according to the PRIME-MD. However, these differences were not statistically significant (95% confidence interval, CI: -0.22 to -37.8).

At 12 months of follow-up, the recovery rate was 45% in both groups and, again, the results were not statistically significant.

The difference in QALYs gained between both groups was small and not statistically significant, and similar for both tariffs at both times of follow-up.

**Clinical conclusions**

The provision of IPT to elderly depressed patients in primary care was shown to be ineffectual, as the differences in clinical outcomes in both groups were small and non significant.

**Measure of benefits used in the economic analysis**

The measures of health benefit used in the analysis were the primary outcomes of the clinical study. Specifically, remission of depression, response to treatment at 12 months, changes in severity of depression, recovery from depression at 12 months and QALYs gained at 12 months’ follow-up. The QALYs were calculated by multiplying the time a patient spent in a particular health state with the utility based on the EuroQol scores using Dutch and British tariffs. Transitions between health states were linearly interpolated.

**Direct costs**

Patient and health service direct costs were included. The cost data were collected using cost diaries for patients in the RCT. The authors reported the cost data in supplementary tables in the online journal. The estimation of prices was based on Dutch guidelines. Medication costs were valued using prices of the Royal Dutch Society for Pharmacy, while the costs of complementary medicine visits were based on prices from therapists. All costs were adjusted to the year...
2003 using consumer price indices. The costs were reported as the average cost per patient. The price year was 2003. Discounting was not relevant.

Statistical analysis of costs
The costs were treated stochastically and were presented as the arithmetic mean per patient per group with standard deviation (SD). Statistical analyses were carried out to test the statistical significance of differences in the costs. Ninety-five per cent CIs were calculated using the percentile bootstrap method based on 2,000 replications.

Indirect Costs
Productivity costs were included in the analysis as a societal perspective was adopted. Absenteeism from work was derived by means of the friction cost approach (friction period of 123 days) using the mean age- and gender-specific income of the Dutch population. Discounting was not relevant.

Currency
Euros (EUR).

Sensitivity analysis
Uncertainty around the cost-effectiveness and the cost-utility ratios was calculated using the percentile bootstrap method based on 2,000 replications. The bootstrapped cost-effect pairs in the pooled data set were plotted on a cost-effectiveness plane. No sensitivity analysis was performed.

Estimated benefits used in the economic analysis
See the 'Effectiveness Results' section.

Cost results
The mean total cost per patient after 12 months' follow-up was EUR 5,753 (SD=6,797) for the IPT group and EUR 4,984 (SD=7,059) for the CP group. The difference was EUR 769 (95% CI: -2.459 to -3.433) However, this difference was not statistically significant.

No sensitivity analysis was performed.

Synthesis of costs and benefits
Incremental cost-effectiveness ratios (ICERs) were reported for the MADRS, PRIME-MD and the recovery rate outcomes. The ICERs were not reported for the other outcomes, the authors stating that IPT was simply not cost-effective compared with CP. Some results were reported in a cost-effectiveness plane.

The cost-effectiveness plane for remissions showed that IPT was not cost-effective after either period of follow-up. After 12 months, the IPT strategy was more costly and less effective, resulting in a negative ICER of -EUR 131. The non significant differences in costs and effects were confirmed by the cost-effective plane.

The ICER for the difference in recovery rates was EUR 6,195 per extra recovered patient after 6 months. This resulted from the positive difference in recovery rates that the IPT group experienced (19%), with a cost-difference of EUR 1,077. At 12 months' follow-up, the ICER increased to EUR 353,585, resulting from a decrease of 0.2% in the recovery rate associated with an increase in costs of EUR 769.

Uncertainty around the cost-effectiveness was calculated using the percentile bootstrap method based on 2,000 replications. The bootstrapped cost-effect pairs in the pooled data set were plotted on a cost-effectiveness plane. At 12 months, 17% of iterations were in the 3rd quadrant, showing that the IPT programme was more effective and less
expensive; 35.1% of the interactions revealed that IPT was more effective and also more expensive; 37.4% of the interactions revealed IPT to be less effective and more expensive; and 10.5% of the interactions revealed IPT to be less effective and less expensive.

Authors’ conclusions
The provision of interpersonal psychotherapy (IPT) to elderly primary care patients with major depression, who were identified by screening, was not cost-effective in comparison with current practice (CP) at either 6 or 12 months.

CRD COMMENTARY - Selection of comparators
The selection of the comparator was appropriate as it appears to have reflected current practice for the treatment of depression in senior patients. You should decide whether this is a valid comparator in your own setting.

Validity of estimate of measure of effectiveness
The effectiveness data were derived from a single RCT, which was appropriate for the study question. The study sample was representative of the study population. In addition, the patient groups were shown to be comparable at analysis. The statistical comparisons were reported in a supplementary table online. The method of randomisation and blinding was reported. The length of the study (i.e. 1 year) would seem to be insufficient to assess the full effectiveness of the treatment. Nevertheless, the internal validity of the study is likely to be good. Power calculations were reported and an appropriate sample size was used.

Validity of estimate of measure of benefit
The estimation of benefits was obtained directly from the effectiveness analysis. Five measures of benefit were used: remission of depression, response to treatment, changes in severity of depression, recovery from depression and QALYs gained. Appropriate methods were used to derive these benefits and the methods were adequately reported. The use of QALYs makes it possible to compare the results with other health-related technologies.

Validity of estimate of costs
The analysis of the costs was performed from a societal perspective and all the relevant categories of costs appear to have been included. The cost data were reported in supplementary tables in the online journal. The costs were collected prospectively alongside the clinical trial, so the costs were based on the study population in the study setting. The main limitation, as is often the case, was that the RCT had insufficient statistical power to detect cost-differences. The price year was reported and all costs were properly adjusted using consumer price indices. A sensitivity analysis of the prices was not conducted.

Other issues
The authors compared their findings with those from other studies and, in general, the results were in agreement. The authors did not acknowledge variation in the cost data, nor did they evaluate the impact on the economic results through a sensitivity analysis. The authors acknowledged a number of limitations to their study. For example, they addressed the optimal duration of IPT and the effects of maintenance treatment to sustain treatment effects gained in the acute treatment phase.

Implications of the study
The authors recommended that future research should focus on patient groups that may especially benefit from IPT in primary care. The authors stressed the need to look for evidence on treatments that have more robust effects, both in the acute and in the maintenance phase of treatment, and that the cost-effectiveness of psychotherapy in primary care may also be improved by incorporating psychotherapy in collaborative care models.

Source of funding
Funded by the Netherlands Organization for Health Research and Development (ZonMw).

Bibliographic details

**PubMedID**
17937837

**DOI**
10.1017/S0266462307070572

**Other publications of related interest**
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**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Aged; Cost-Benefit Analysis; Depressive Disorder, Major /psychology /therapy; Humans; Interpersonal Relations; Middle Aged; Netherlands; Primary Health Care; Psychotherapy /economics /methods

**AccessionNumber**
22007008294

**Date bibliographic record published**
31/03/2008

**Date abstract record published**
31/03/2008