Motivational enhancement therapy with and without cognitive behaviour therapy for type 1 diabetes: economic evaluation from a randomized controlled trial

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 assess the cost-effectiveness of motivational enhancement therapy (MET) with or without cognitive-behavioural therapy (CBT) for adults with poorly controlled type 1 diabetes. The authors concluded that neither intervention was indisputably cost-effective, compared with usual care, and the conclusions varied depending on the use of a clinical or a quality of life outcome. There were some limitations in the authors' reporting, making it difficult to assess their conclusions.

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

Study objective
The objective was to assess the cost-effectiveness of motivational enhancement therapy (MET) and cognitive-behavioural therapy (CBT) for adults with poorly controlled type 1 diabetes.

Interventions
Three interventions were considered: four sessions of a diabetes-specific MET over two months, in addition to the usual diabetes care; four sessions of MET over two months, followed by eight sessions of CBT, over the next four months, in addition to the usual diabetes care; and the usual diabetes care alone.

Location/setting
England/secondary care.

Methods
Analytical approach:
The study was based on a multicentre randomised controlled trial (RCT), with a one-year time frame. The authors reported that a health and social care perspective, and a societal perspective were adopted.

Effectiveness data:
The effectiveness data were from a multicentre RCT, which recruited 344 adults who had been diagnosed with type 1 diabetes at least two years previously and who had persistent, suboptimal glycaemic control. Participants were followed-up by telephone interview at six and 12 months after randomisation. The main clinical effectiveness estimate was diabetes control measured by the change in glycated haemoglobin (HbA\textsubscript{1c}) in the blood at one year.

Monetary benefit and utility valuations:
Quality of life was assessed, using the European Quality of life (EQ-5D) questionnaire and the Short Form (SF)-36 Health Survey at baseline and at one year.

Measure of benefit:
The measures of benefit were the quality-adjusted life-year (QALY) and a point improvement in HbA\textsubscript{1c}.

Cost data:
The economic analysis included the costs associated with hospital care, primary care, community care, social services, medication, and the intervention. The societal analysis also included the participants' and families out-of-pocket.
expenses, informal care, and lost productivity, pay, and leisure time. The resource use was obtained by questionnaire from those participating in the RCT. The unit costs were provided in an online appendix. The price year was 2005 to 2006 and the costs were reported in UK pounds sterling (£).

Analysis of uncertainty:
The analysis of uncertainty evaluated the impact of missing data on the results and calculated cost-effectiveness acceptability curves, based on a series of net benefit analyses.

Results
Full data at follow-up was available for 182 participants. Compared with usual care, MET was associated with a 0.14 point improvement in HbA1c and a 0.011 increase in QALYs (based on EQ-5D); while MET plus CBT was associated with a 0.45 point improvement in HbA1c and 0.003 increase in QALYs. Comparing MET with MET plus CBT, resulted in a 0.28 point improvement in HbA1c and a -0.008 decrease in QALYs.

From a health and social care perspective, compared with usual care, MET was associated with an additional cost of £535 per patient, while MET plus CBT resulted in an additional cost of £790 per patient. The incremental cost per point improvement in HbA1c with MET plus CBT compared with usual care was £1,756. For all other cost and outcome combinations, there were either no significant differences in the costs or outcomes, or the intervention was dominated, as it was more costly and less effective than another.

The cost-effectiveness acceptability curves suggested that both interventions had little probability of being cost effective when QALYs were used as the outcome measure. At a threshold of £25,000 per additional QALY, the probability of either of the interventions being cost-effective was a maximum of 0.33.

Authors' conclusions
The authors concluded that neither intervention was indisputably cost-effective. MET plus CBT could improve HbA1c at an additional cost, but the cost-effectiveness conclusion varied depending on whether a clinical or a quality of life outcome was used.

CRD commentary
Interventions:
The interventions were described and were appropriately compared with the usual care in the authors' setting.

Effectiveness/benefits:
The clinical data were from a multicentre RCT, which should ensure high internal validity, but details, such as the blinding and randomisation processes, were not reported, making it difficult to assess the trial's validity. A sample size calculation was not given, so it is not clear if the study was sufficiently powered to detect differences between the groups. The use of QALYs as the outcome measure was appropriate and allows comparisons with other studies.

Costs:
The authors reported the perspectives and the relevant costs appear to have been included. Resource use was appropriately derived from participants in the RCT, and some details were reported, but the significant loss to follow-up (344 patients were randomised and 182 provided data) might have affected the cost analysis. The unit costs were available online, but were not in the paper, making it impossible to comment on them. The price year was reported and discounting was not necessary as the time horizon was one year.

Analysis and results:
An incremental cost-effectiveness ratio was calculated for only one cost and outcome combination; this analysis could have included other combinations with no significant differences in the costs and outcomes. The impact of uncertainty was satisfactorily addressed in cost-effectiveness acceptability curves. The authors reported some limitations to their analysis, including the significant loss to follow-up.

Concluding remarks:
There were some limitations in the authors' reporting, making it difficult to meaningfully assess their conclusions.
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