The cost-effectiveness of anorexia nervosa treatment

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Health technology
Two different strategies for treatment of anorexia nervosa were compared. The "usual care" strategy represented the approach to treatment commonly supported by third-party payers in the USA. This strategy involved inpatient hospitalisation (7 days), partial hospitalisation (15 days), psychotherapy (25 sessions), medication management (20 sessions) and fluoxetine prescription (60 mg/day for 2 years). The "adequate care" strategy represented a more traditional approach, involving inpatient weight restoration to approximately 100% of the ideal body weight followed by more extensive and aggressive follow-up care. This strategy involved inpatient hospitalisation (45 days), partial hospitalisation (20 days), psychotherapy (50 sessions), medication management (20 sessions) and fluoxetine prescription (60 mg/day for 2 years).

Type of intervention
Treatment.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised patients with anorexia nervosa.

Setting
The study setting was secondary care. The economic analysis was carried out in the USA.

Dates to which data relate
The effectiveness data were derived from studies dating from 1995 to 2001. The price year was not reported.

Source of effectiveness data
The effectiveness data were derived from a review of published studies, supplemented by the authors' assumptions.

Modelling
A model was used to derive the outcomes, costs and cost-effectiveness of the two treatment strategies for anorexia nervosa. Details of the structure of the model were not reported.

Outcomes assessed in the review
The outcomes assessed were the mortality rate of anorexia nervosa, the age at the time of death, and the life expectancy of females of all races in the USA.

Study designs and other criteria for inclusion in the review
Not reported.

Sources searched to identify primary studies
Not reported

Criteria used to ensure the validity of primary studies
Not reported.

Methods used to judge relevance and validity, and for extracting data
Not reported.

Number of primary studies included
Four studies were included in the review. Three studies were used to derive anorexia nervosa mortality rates, one to derive age at the time of death, and one to derive female life expectancy.

Methods of combining primary studies
The authors did not report how the results from the 3 studies investigating anorexia nervosa mortality rates were combined.

Investigation of differences between primary studies
The authors did not report whether there were any differences between the studies from which the mortality rates were derived.

Results of the review
The mortality rate of anorexia nervosa was 10%.

The age at the time of death was 25 years.

The life expectancy of a female based on year 2000 figures was 80.2 years.

Methods used to derive estimates of effectiveness
The authors made assumptions to supplement the estimates of effectiveness derived from the literature.

Estimates of effectiveness and key assumptions
The authors assumed that the reported mortality rates represented the benefit derived from the usual care model. They also assumed that the adequate care model provided enough treatment impact to ameliorate the mortality risk associated with anorexia nervosa for 50% of those who received treatment.

Measure of benefits used in the economic analysis
The health benefits used were the life-years gained.

Direct costs
The resource quantities and the costs were reported separately. The direct costs included in the analysis were those of the third-party payer. These were for inpatient treatment, partial hospitalisation, psychotherapy visits, medication management visits, and fluoxetine. The unit costs were derived from costs charged to third-party payers at local institutions or, in the case of fluoxetine, the local average wholesale price for brand name fluoxetine. Discounting does not appear to have been relevant since as all costs seem to have been incurred during 2 years. The study reported the average costs. The price year was not reported.

Statistical analysis of costs
The costs were treated as point estimates (i.e. the data were deterministic).

Indirect Costs
The indirect costs were not included in the analysis, as accurate estimates of the time costs associated with anorexia nervosa did not exist.

Currency
US dollars ($).

Sensitivity analysis
No sensitivity analysis was performed.

Estimated benefits used in the economic analysis
The authors did not report the actual life-years saved by the two treatment strategies.

Cost results
The cost of the usual treatment package was $36,200 per patient, while the cost of the adequate care treatment package was $119,200 per patient.

Synthesis of costs and benefits
The costs and benefits were combined by calculating an incremental cost-effectiveness ratio (i.e. the additional cost required per life-year saved). The incremental cost-effectiveness ratio of adequate care versus usual care was $30,180 per life-year saved.

Authors' conclusions
Anorexia nervosa treatment was reasonably cost-effective in terms of the cost per life-year saved.

CRD COMMENTARY - Selection of comparators
A justification was given for the comparator used. The comparator represented the treatment commonly supported by third-party payers in the USA. You should decide if this is a widely used treatment strategy in your own setting.

Validity of estimate of measure of effectiveness
The authors did not state that a systematic review of the literature was undertaken to identify all relevant research and minimise bias. The review also appears to have been rather small, with only four studies included and not many outcomes assessed. Hence, it is unlikely that all relevant research was obtained. When multiple studies were used to derive mortality rates, the authors did not report how the estimates of the different studies were combined, or why the 10% rate was finally used. The authors reported the results of the literature review in a manner that suggested that patients, if they died, would die at age 25 years. If not, they would live until the age of 80.2 years (average life expectancy), even if they had had the disease, which seems unrealistic. The authors also made important key assumptions such as the effectiveness of the two strategies. No indication was given why a 50% effectiveness estimate was given to the "appropriate care" strategy. Further, these assumptions were not appropriately tested in a sensitivity analysis.

Validity of estimate of measure of benefit
The life-years saved by both strategies were modelled. However, the authors gave no clear indication of the type of model used, nor did they report the actual life-years saved by both strategies.

Validity of estimate of costs
All the categories of cost relevant to the perspective of the third-party payer appear to have been included in the analysis. No costs appear to have been omitted. However, the authors reported that one of the limitations of their study was that a societal perspective had not been adopted. The costs and the quantities were reported separately, which enhances the generalisability of the authors' results. No statistical or sensitivity analyses of the costs were undertaken, which will limit the interpretation of the study findings, as uncertainty in the cost data was not appropriately tested for. The authors did not explicitly report the time period during which the costs were incurred, although the costs seem to have been incurred during a 2-year period. Hence, discounting was not relevant. Charges were used to proxy prices. The price year was not reported, which will hamper any possible inflation exercises.

Other issues
The authors did not make appropriate comparisons of their findings with those from other studies, owing to the very limited work on cost-effectiveness analyses in anorexia nervosa. The issue of generalisability to other settings was not addressed. The authors do not appear to have presented their results selectively. However, the internal validity of their study is highly questionable. The authors' conclusions reflected the scope of the analysis. A further limitation to the study, as the authors reported, was that the study was based on modelled rather than actual data. This was because there were relatively few controlled trials of any treatments for anorexia nervosa. Of the existing studies, none were of sufficient size, or provided health care utilisation data or long-term mortality data.

Implications of the study
Based on the results of their study, the authors would appear to recommend the use of the extensive anorexia nervosa treatment over usual care.

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Other publications of related interest
Koran LM, Agras WS, Rossiter EM, et al. Comparing the cost effectiveness of psychiatric treatments: bulimia nervosa. Psychiatry Research 1995;58:13-21.

Mitchell JE, Peterson CB, Agras S. Cost-effectiveness of psychotherapy for eating disorders. In: Miller NE, Magruder KM, editors. Cost-effectiveness of psychotherapy, a guide for practitioners, researchers, and policymakers. New York: Oxford University Press; 1999. p.270-8.

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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.