Parenting programme for parents of children at risk of developing conduct disorder: cost
effectiveness analysis

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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.

Health technology
The study evaluated the Webster-Stratton Incredible Years basic parenting programme, delivered through Sure Start, for children at risk of developing conduct disorders (identified using the clinical cut off on the Eyberg child behaviour inventory). The comparator involved 6-month waiting-list controls receiving usual care.

Type of intervention
Primary prevention.

Economic study type
Cost-effectiveness analysis.

Study population
The study population comprised children between the age of 3 and 4 years whom the parents had reported to be above the clinical cut-off on either the intensity or problem scale (127 and 11, respectively) of the Eyberg child behaviour inventory.

Setting
The setting was the community. The economic study was carried out in the UK.

Dates to which data relate
The dates to which the effectiveness and resource data pertained were not reported. The price year was 2003/04.

Link between effectiveness and cost data
The costing was undertaken prospectively on the same patients that provided the effectiveness data.

Study sample
Few details of the clinical study were reported as they were published in an accompanying paper (Hutchings et al 2007, see 'Other Publications of Related Interest' below. One hundred and fifty-three consented to participate in the study and were randomised to the intervention group or to a 6-month waiting-list control group. The exact numbers in the two groups were not reported. However, data were provided for 86 in the intervention group and 47 in the control group who were available for follow-up at 6 months. Economic data were available for 73 families in the intervention group and 43 in the control group. The groups were shown to be matched at baseline on the Eyberg child behaviour inventory. The 17 families not included in the economic analysis because of incomplete data on costs were shown to be similar, in Eyberg intensity score, to the 116 on whom the economic analysis was based.
Study design
The study was a pragmatic randomised controlled trial, but the method used for random allocation was not reported (see Hutchings et al 2007 for further details). The groups were followed up with home visits at 6 months.

Analysis of effectiveness
The analysis of effectiveness was based on improvement in the intensity and problem score of the Eyberg child behaviour inventory. The analysis was probably conducted on the basis of treatment completers, as it used the results for those who were available for follow-up. The groups were shown to be comparable in terms of their demographic characteristics at baseline.

Effectiveness results
The mean intensity score fell from 144.46 (standard deviation, SD=24.18) to 117.17 (SD=35.99) in the intervention group, (p<0.0001), while the mean problem score fell from 16.18 (SD=6.88) to 12.09 (SD=9.83), (p<0.0001).

The intensity score in the control group was unchanged at 140.74 (baseline, SD=24.47; follow-up, SD=40.77), (p=0.56), whilst the problem score fell from 14.70 (SD=7.45) to 12.95 (SD=10.87), (p=0.25).

The intervention delivered a 27.29-point reduction in mean intensity score (95% confidence interval, CI: 16.41 to 36.42).

At follow up, 62% of children in the intervention group and 42% in the control group had Eyberg intensity scores below the clinical cut-off of 127.

Clinical conclusions
The authors concluded that the parenting programme improved child behaviour as measured by the intensity score of the Eyberg child behaviour inventory.

Measure of benefits used in the economic analysis
The improvement in intensity score of the Eyberg child behaviour inventory was the measure of benefit used in the economic analysis. This was derived from the effectiveness analysis.

Direct costs
The study examined costs to the public sector including health, special education and social services. Group running costs were derived from weekly cost diaries kept by 4 of the 11 group leaders. The children's use of health, social, and special educational services was derived from a client service receipt-inventory administered to parents at baseline and follow-up. National costs were applied to these services drawn from published sources such as the Unit Costs of Health and Social Care 2004 and NHS reference costs for 2003-04. The costs were calculated in 2003/04 UK pounds sterling. Both the unit costs and total costs were reported. Discounting was not performed.

Statistical analysis of costs
One thousand bootstrap replications were used to provide CIs for the point estimates of incremental cost-effectiveness.

Indirect Costs
Productivity costs were not considered.

Currency
UK pounds sterling (£).
Sensitivity analysis
A sensitivity analysis was performed to examine the costs of rolling out the programme, excluding the initial non-recurrent costs of training and materials. Subgroup sensitivity analyses were conducted for those at mild, moderate and severe risk of conduct disorder, to determine whether cost-effectiveness varied with intensity of risk at baseline. A cost-effectiveness acceptability curve for a range of cost ceilings was produced.

Estimated benefits used in the economic analysis
The benefits used in the analysis are shown in the 'Effectiveness Results' section.

Cost results
The increase in mean costs per index child was 1,992.29 for the intervention group and 49.14 for the control group over 6 months.

Synthesis of costs and benefits
The bootstrapped incremental cost-effectiveness ratio point estimate was 73 per point improvement in intensity score (95% CI: 42 to 140).

It would cost 5,486 to bring the child with the highest intensity score to within the non-clinical limits of the intensity score, and 1,344 for the average child in the intervention group.

Authors’ conclusions
The parenting programme improved child behaviour, as measured by the intensity score of the Eyberg child behaviour inventory, at a relatively low cost and it was cost-effective in comparison with waiting-list controls. This parenting programme involved modest costs and demonstrated strong clinical effect, suggesting that it would represent good value for money in terms of public spending.

CRD COMMENTARY - Selection of comparators
A justification was provided for the technologies compared. They are both commonly used in the authors’ setting, but their relative merits were unknown. 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 pragmatic randomised controlled trial. Few details were reported as they were detailed in an accompanying paper (Hutchings et al 2007). Hence, it is not possible to assess the validity of clinical evidence from the detail reported in the present paper. Bootstrapping sensitivity analyses were used to take the distribution of the raw data into account.

Validity of estimate of measure of benefit
The estimate of measure of benefit used in the incremental cost-effectiveness analysis was the Eyberg child behaviour inventory, which is a standard and valid instrument. However, the instrument is problem specific and so the result obtained cannot be compared in terms of value with results from other programmes, as would be the case with cost-utility analysis using, for example, quality-adjusted life-years as the health-related outcome.

Validity of estimate of costs
The costs and the quantities were reported separately, which this will enable the reader to estimate the costs in other settings (improved transferability). Discounting was not performed, but it was not necessary as the costs and benefits were accrued during less than 2 years. The costs were subjected to bootstrapping sensitivity analyses, which enhances
the validity of the results.

**Other issues**
The authors reported that parenting programmes are under-researched. They referred to other studies that had been carried out, but they did not compare the findings of these studies against their own. The authors drew attention to the fact that their data did not capture all the benefits of the programmes, especially the benefits to the parents’ mental health and the behaviour of the siblings.

**Implications of the study**
The authors recommended that future research should increase both the number and length of follow-ups.

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

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