Cost-effectiveness of child-focused and parent-focused interventions in a child anxiety prevention program

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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.

CRD summary
This study examined the cost-effectiveness of two programmes, one that was child-focused and the other parent-focused, to prevent anxiety in children aged eight to 12 years who had high anxiety. Either programme was cost-effective compared with no intervention. Parent intervention was preferred for anxious parents and at low cost-effectiveness thresholds; child intervention was preferred in other scenarios. The methods were robust and transparent and the data sources were reported. The conclusions appear to be valid.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
This study examined the cost-effectiveness of two programmes, one that was child-focused and the other parent-focused, to prevent anxiety in children aged eight to 12 years who had high anxiety.

Interventions
The three comparators were a child-focused intervention, a parent-focused intervention, and no intervention.

Both the interventions were delivered in primary schools, after school hours. They were led by therapists (graduate psychologists), supported with illustrated books, and they were based on existing cognitive-behavioural therapies. There were eight child-focused sessions, with six to eight children per group, or three parent-focused group sessions plus five telephone sessions.

Location/setting
Netherlands/primary school.

Methods
Analytical approach:
The analysis was based on one study with a time horizon of two years. The authors stated that the perspective was that of society.

Effectiveness data:
The clinical data were from a randomised controlled trial (RCT) recently published by some of the authors of this economic evaluation. Children and their parents were enrolled via primary schools. Those children that scored highly on a questionnaire to assess anxiety (the top 15% of scores) were asked to participate and were randomised to one of the three groups. There were 412 eligible children, with complete information at two-year follow-up for 30 out of 47 children in the child group, 32 out of 49 in the parent group, and 31 out of 43 in the no intervention group. The primary outcome was the Dutch version of the Anxiety Disorder Interview Schedule (ADIS), which assessed the presence and severity of anxiety in children. Parental anxiety was estimated using the adult version of the Screen for Child Anxiety Related Emotional Disorders-71 (SCARED-A). Missing data were created using the Last Assessment Carried Forward method.

Monetary benefit and utility valuations:
Not considered.
Measure of benefit:
The proportion of children with an improved ADIS score in each group was the summary benefit measure.

Cost data:
The economic analysis included the costs of the intervention (psychologists, participants’ travel and time, and telephone expenses) and the management of anxiety (visits to health care professionals, professional help at home, school and work absences, and out-of-pocket expenses, such as over-the-counter medications). The quantities of resources were measured using diaries completed by the parents at pre-test, and one- and two-year follow-ups. Most of the unit costs were based on official Dutch prices. They were in Euros (EUR) and the price year was 2008. Those costs incurred between the one- and two-year follow-ups were discounted at a rate of 4%.

Analysis of uncertainty:
Bootstrapping, with 1,000 replications, of the costs and effects was performed to generate cost-effectiveness acceptability curves, for willingness-to-pay values ranging from zero to EUR 7,500. Scenario analyses focused only on intervention completers, considered a health care perspective, and reduced trainer costs. Subgroup analyses considered the gender of children, anxious versus non-anxious parents, and school year.

Results
The total societal costs (bootstrapped and corrected by pre-test differences) were EUR 3,219 for child intervention, EUR 2,977 for parent intervention, and EUR 2,981 with no intervention. These differences between groups were not statistically significant. The direct health care costs were much lower in the child group than in the other two groups.

The proportion of ADIS improved children was 0.51 with child intervention, 0.45 with parent intervention, and 0.28 with no intervention. The differences between the two interventions and no intervention were statistically significant; the difference between the two interventions was not.

No intervention was dominated as it was more expensive and less effective than parent intervention and it was excluded from the analysis. The incremental cost per improved child, with child over parent intervention was EUR 4,364.

The probabilistic analysis showed that the choice between parent and child intervention was highly uncertain. At a willingness-to-pay up to EUR 3,000, parent intervention was preferred, while child intervention was preferred at higher values.

The sensitivity analyses confirmed the base-case findings, with child intervention preferred in most scenarios, but high uncertainty around its cost-effectiveness relative to parent intervention. Child intervention was dominant from a health care perspective, and its cost-effectiveness was improved when trainer costs were reduced. Parent intervention was dominant for anxious parents, but the reverse was found for non-anxious parents.

Authors’ conclusions
The authors concluded that a programme for highly anxious children was cost-effective compared with no intervention. Parental intervention was preferred for anxious parents and at low cost-effectiveness thresholds; child intervention was preferred with a health care perspective, for non-anxious parents, and at higher thresholds.

CRD commentary
Interventions:
Two valid available interventions were considered and they were compared with no intervention, which is likely to have been the usual care in many settings.

Effectiveness/benefits:
The clinical analysis was based on the findings of a randomised controlled trial, which was an appropriate source of evidence for this kind of intervention. The trial appears to have been robust and well conducted. The size of the sample was appropriate to detect statistically significant differences in the primary endpoint, between treatment groups. An appropriate intention-to-treat analysis was conducted and the method used to create missing data was reported. Pre-test differences between groups were taken into account in a regression analysis. Those children included in the analysis and those excluded due to incomplete data were comparable at baseline in their clinical and demographic characteristics,
except for the mother’s education. The length of follow-up was appropriate. The ADIS was a validated and appropriate measure, but it produced an intermediate measure of the health impact of the interventions and does not allow comparisons with the benefits of other health care interventions.

Costs:
The cost categories reflected the perspective of society as stated. A list of cost items was reported with the unit costs. Diaries were prospectively completed by parents to measure resource use and this is likely to have been accurate. Standard Dutch sources were used for the unit costs. Pre-test differences in the three groups were accounted for in a regression analysis. A comparison of the cost data between the groups was performed using non-parametric bootstrapping. Some costs were varied in the scenario analyses. The costs of training the professionals were not included, but might have been important. Details, such as the discount rate and price year, were provided.

Analysis and results:
The results were clearly presented and an incremental analysis was used to synthesise the costs and benefits of the strategies. The uncertainty was satisfactorily investigated in deterministic and probabilistic analyses, as well as subgroup and scenario analyses. The authors acknowledged some limitations to their analysis, such as the short time horizon, the problems with defining an ADIS improvement cost-effectiveness threshold, and the differences in mothers’ education between participating and non-participating children. They stated that this was the first study assessing the cost-effectiveness of these programmes for both children and parents. The results appear to be specific to the Dutch setting.

Concluding remarks:
The methods were robust and transparent, the data sources were reported, and the uncertainty was investigated. The authors’ conclusions appear to be valid.

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