Cost-effectiveness of a school-based obesity prevention program

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 assessed the cost-effectiveness of an after-school care intervention, aimed at promoting physical activity and healthy eating, and reducing sedentary behaviour amongst elementary school children, and compared it with the usual after-school care with no intervention. The authors concluded that a significant reduction in body fat was achieved, at a relatively low cost, and the programme was likely to be cost-effective. The authors’ conclusion of cost-effectiveness was based on a subjective value for a reduction in body fat.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
The objective was to assess the cost-effectiveness of an after-school care intervention, aimed at promoting physical activity and healthy eating, and reducing sedentary behaviour, amongst elementary school children, and compare it with that of normal after-school care with no intervention.

Interventions
The Medical College of Georgia FitKid Project, which aimed to provide elementary school children with an after-school care environment that promoted moderate-to-vigorous activity, healthy snacks, and academic enrichment, was compared with no intervention.

Location/setting
USA/primary care.

Methods
Analytical approach:
The effectiveness and cost data were collected from a single randomised controlled trial. The time horizon was one year and the authors stated that a societal perspective was adopted.

Effectiveness data:
The effectiveness data were from a one-year randomised controlled trial, with a sample of 312 children for the intervention and 289 for the control. The primary outcome was the reduction in percentage of body fat.

Monetary benefit and utility valuations:
Not relevant.

Measure of benefit:
The primary measure of benefit was the reduction in the percentage of body fat at one-year follow-up.

Cost data:
The cost categories, for the intervention, included personnel, training, transport, and materials (e.g. sports equipment) and the costs associated with setting up and running the intervention. These were collected from the randomised trial. The costs for the control group, were based on a survey, conducted before the trial, that assessed after-school child care, and they were valued using the results of the National Household Education Survey, conducted in 1995 (National Center for Education Statistics. 1999, see ‘Other Publications of Related Interest’ below for bibliographic details). The cost data were reported in US dollars ($).
Analysis of uncertainty:
The authors conducted a univariate sensitivity analysis to assess the impact of variation in the per capita usual after-school care costs on the results.

Results
The total cost of the intervention, provided over a total of 128 days, was $174,070 for the first year. The cost per capita for the same period was estimated to be $956, based on the 182 students who attended 40% or more of the sessions. The usual after-school care (no intervention) was estimated to cost $7.44 per child per day or $639 per capita.

The intervention reduced body fat in the intervention group by 0.76% at an additional cost of $317 per student. Varying the per capita usual after-school care costs between $5 and $10 caused the additional cost of the intervention to vary from $98 to $527 per 0.76% body fat reduction.

Authors’ conclusions
The authors concluded that, in children who attended at least 40% of sessions, a significant reduction in body fat was achieved, at a relatively low cost, and the programme was likely to be cost-effective.

CRD commentary
Interventions:
The intervention was well described and was compared with no intervention, which was likely to have been the usual situation, but the content of the usual after-school care was not described, which makes it impossible to interpret these results for other settings. It is possible that there were other interventions that might have been relevant to other settings and were not included.

Effectiveness/benefits:
The effectiveness data were from a well-designed randomised controlled trial. The authors acknowledged that it was unclear whether or not one year of follow-up was sufficient to assess compliance and the duration of effectiveness. They also acknowledged that the public health significance of a reduction in fat, as a measure of benefit, was unknown.

Costs:
The authors reported the study perspective and they appear to have included the relevant cost categories, but the cost analysis was not adequately reported. For example, the cost year was not reported, which means that the results cannot be revalued for future years. The costs appear to have been relevant to the study setting.

Analysis and results:
The authors did not calculate an incremental cost-effectiveness ratio, but they presented the results as a cost of the effect observed. The cost data were presented as totals and as differences between the intervention and control. The authors did not mention whether a clustered analysis was performed to account for randomisation at the level of the school. They evaluated the uncertainty in one parameter estimate, but a multivariate sensitivity analysis would have more fully assessed the effects of uncertainty across the key parameters. The authors discussed the limitations of their study.

Concluding remarks:
The authors’ conclusion of cost-effectiveness was based on a subjective value for a reduction in body fat.

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Bibliographic details