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“Games Galore”

A feasibility study to investigate the effect of a physical activity and nutrition education programme for 10-14 year old New Zealand overweight and obese children

A thesis presented in partial fulfillment of the requirements for the degree of Master of Science in Nutritional Science at Massey University, Albany, New Zealand

Christel Dunshea-Mooij
2003
Players of the Auckland Blockbuster Basketball team and some of the participants' of the "Games Galore" feasibility study in action.
Abstract

It is widely acknowledged that obesity has emerged as an epidemic in developed countries during the last quarter of the 20th century [1]. It is an issue of great concern, affecting adults and children of both wealthy and middle-income people in both middle-income countries as well as residents of countries previously considered to be poor [2]. The World Health Organisation has stated that the prevalence of obesity and overweight is increasing in both adult and childhood populations throughout the world, and has acknowledged management of obesity as a priority area of public health action [1].

This feasibility study “Games Galore” investigated the effect of a physical activity and nutrition education intervention for the development of ongoing self-motivated participation in physical activity and of healthy eating habits of both male and female 10-14 year old New Zealand overweight or obese children.

Twenty-two students of an intermediate and a full primary school enrolled in the “Games Galore” feasibility study. The participants were all residents of West Auckland, New Zealand and participated twice weekly in a games programme and once every fortnight in a nutrition education programme. Anthropometric data was collected at baseline, 4 months, 6 months (end of the intervention), 10 months (4 months post intervention), and 16 months (10 months post intervention). A qualitative dietary habit questionnaire, a diet and activity questionnaire, a food frequency questionnaire, a 3 day diet and physical activity diary, and a three 24-hour recalls were administered to assess nutrient intake and physical activity.

There was no significant change seen in any of the assessed anthropometric indicators from baseline to 16 months post intervention. Some positive change was seen for outdoor play during weekdays (p=0.02). However, there was no significant change in any of the other measurements for physical activity, indicating no increase in self-motivated participation in physical activity. There was also no change in dietary intake during and post intervention, indicating no change in eating habits.
During this 16 months “Games Galore” feasibility study (6 month intervention, 10 month follow-up) there was no significant change in the participants' participation of physical activity and the participants’ eating habits. This is most likely due to the implementation of too few predictors of childhood overweight and lack of parental support. The latter limits the results due to lack of stimulation and motivation for the participants to participate at the nutrition education sessions and incorporate a “healthy” lifestyle.
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<tr>
<td>BIOSIS</td>
<td>biological abstracts</td>
<td>BMI</td>
<td>body mass index</td>
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<tr>
<td>BMR</td>
<td>basal metabolic rate</td>
<td>CI</td>
<td>confidence interval</td>
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<td>CINAHL</td>
<td>cumulative index to nursing and allied health literature</td>
<td>CHD</td>
<td>coronary heart disease</td>
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<td>CHO</td>
<td>carbohydrate</td>
<td>cm</td>
<td>centimeter</td>
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<td>CT</td>
<td>computed tomography</td>
<td>CVD</td>
<td>cardiovascular disease</td>
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<td>DEXA</td>
<td>dual energy x-ray absorptiometry</td>
<td>DLW</td>
<td>double-labelled water</td>
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<td>DRV</td>
<td>dietary reference values</td>
<td>E exp</td>
<td>energy expenditure</td>
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<td>E int</td>
<td>energy intake</td>
<td>EMBASE</td>
<td>biomedical and pharmacological abstracts</td>
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<td>FFQ</td>
<td>food frequency questionnaire</td>
<td>g</td>
<td>grams</td>
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<td>HR</td>
<td>heart rate</td>
<td>IOTF</td>
<td>international obesity taskforce</td>
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<tr>
<td>Kcal</td>
<td>kilo calories</td>
<td>kg</td>
<td>kilograms</td>
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<tr>
<td>kg/m²</td>
<td>kilograms per square meter</td>
<td>kJ</td>
<td>kilojoules</td>
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<td>m</td>
<td>meter</td>
<td>MANOVA</td>
<td>multiple analysis of variance</td>
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<td>medical literature, analysis, and retrieval system online</td>
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<td>MRI</td>
<td>magnetic resonance imaging</td>
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<td>NIDDM</td>
<td>non insulin dependent diabetes mellitus</td>
<td>NHANES</td>
<td>national health and nutrition examination survey</td>
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<td>New Zealand</td>
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<td>power</td>
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<tr>
<td>RDA</td>
<td>recommended dietary allowance</td>
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<td>resting metabolic rate</td>
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<td>television</td>
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<td>VO2max</td>
<td>maximum value of oxygen</td>
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<td>World Health Organisation</td>
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<td>waist to hip ratio</td>
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