

Randomized Controlled Trial of the MEND Program: A Family-based Community Intervention for Childhood Obesity

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The aim of this study was to evaluate the effectiveness of the Mind, Exercise, Nutrition, Do it (MEND) Program, a multicomponent community-based childhood obesity intervention (www.mendcentral.org). One hundred and sixteen obese children (BMI \geq 98th percentile, UK 1990 reference data) were randomly assigned to intervention or waiting list control (6-month delayed intervention). Parents and children attended eighteen 2-h group educational and physical activity sessions held twice weekly in sports centers and schools, followed by a 12-week free family swimming pass. Waist circumference, BMI, body composition, physical activity level, sedentary activities, cardiovascular fitness, and self-esteem were assessed at baseline and at 6 months. Children were followed up 12 months from baseline (0 and 6 months postintervention for the control and intervention group, respectively). Participants in the intervention group had a reduced waist circumference z-score (-0.37 ; $P < 0.0001$) and BMI z-score (-0.24 ; $P < 0.0001$) at 6 months when compared to the controls. Significant between-group differences were also observed in cardiovascular fitness, physical activity, sedentary behaviors, and self-esteem. Mean attendance for the MEND Program was 86%. At 12 months, children in the intervention group had reduced their waist and BMI z-scores by 0.47 ($P < 0.0001$) and 0.23 ($P < 0.0001$), respectively, and benefits in cardiovascular fitness, physical activity levels, and self-esteem were sustained. High-attendance rates suggest that families found this intensive community-based intervention acceptable. Further larger controlled trials are currently underway to confirm the promising findings of this initial trial.

INTRODUCTION

The recent dramatic rise in prevalence of childhood obesity is a major public health issue. The extent of the epidemic and its short and long-term effects on physical and psychological health, including a potential reduction in life expectancy for future generations, have made the prevention and treatment of childhood obesity a high priority (1).

International recommendations agree that the core elements of any initiative to address pediatric obesity should involve the whole family and include nutrition education, behavior modification and promotion of physical activity (1–4). However, available evidence is poor with the main weaknesses of the current literature being small sample sizes, noncomparable interventions, limited generalizability due to delivery in centers of academic or clinical excellence and other methodological issues (1,4–6).

Pragmatic controlled trials of child obesity treatments which address these limitations are clearly needed. The present study aimed to assess the efficacy of a multicomponent, community-based childhood obesity intervention (Mind, Exercise, Nutrition, Do it (MEND) Program). MEND, although fulfilling the expert recommendation criteria for an

evidence-based intervention (1–3), has been designed to be delivered in community and primary care settings.

METHODS AND PROCEDURES

The study was conducted between January 2005 and January 2007 at the Medical Research Council Childhood Nutrition Research Centre, UCL Institute of Child Health (London, UK) and was approved by the Metropolitan Multi-Centre Research Ethics Committee (Current Controlled Trials ISRCTN 30238779).

Participants

Potential subjects were recruited from five UK sites by referrals from local health professionals (dietitians, school nurses, and general practitioners), or were self-referred. None of the sites had previously run a MEND Program. Children were eligible if they were obese (BMI \geq 98th percentile, UK 1990 reference data) (7); had no apparent clinical problems, comorbidities, physical disabilities, or learning difficulties, which would interfere with their ability to take part in the program; were aged between 8 and 12 years; and had at least one parent/carer who was able to attend each of the program sessions.

The MEND Program was delivered at five different sites by separate teams of health, social, education, and exercise professionals. Sites had their own principal investigator who was present during data collection. All measurements were performed in community settings. Informed consent was obtained from the parents after provision of written participant

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