

Critical analysis of the study on the efficiency of the mend program for childhood...

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The purpose of the study by Sacher et al. is to evaluate the efficiency and success of the MEND program, the Mind, Exercise, Nutrition, Do it childhood obesity intervention. Also, this study aims to discuss the usefulness of this lifestyle change intervention and be able to provide a proper treatment for the major health issue of obesity by delivering this specific program in a safe community. The study design is a quantitative research because it uses data to answer “ how” and “ what” based questions and targets an enlarged population for precise explanations. Also, a quantitative research uses rigorous study designs to minimize the role of human judgment. Therefore, this study design is an experimental study, specifically a randomized controlled trial. A randomized controlled trial is an experiment in which the researchers control the exposure and randomly assign participants to the experimental or control group. Both groups are followed and assessed in comparison of the outcome measurements.

In the study by Sacher et al. it is a randomized controlled trial because health professionals randomly assigned participants to the control or intervention group and presided control over the sessions. The dieticians, nurses and general practitioners prescribed a diet, provided food and a time frame in order to asses the outcomes of 116 participants. The experimental or intervention group received the intervention immediately and were measured at baseline, 6 and 12 months. 54 (90%) of the 116 started the intervention right away. On the other hand, the control group received the intervention 6 months later and was measured at baseline, 6 and 12 months. 56 (48%) of the 116 were on the waiting list, where 20% (11 children) failed to attend the follow up after 6 months leaving 45 (80%) participants. The

participants were eligible if they were obese having BMI greater than or equal to the 98th percentile. If they were aged between 8 and 12 years old and had no clinical problems such as comorbidities, physical disabilities or learning difficulties.

Lastly, if they had at least one parent that was able to attend each of the program sessions they were eligible. The MEND study intervention is a healthy lifestyle change program based on the principles of nutritional education, behaviour modification and promotion of physical activity, while including the support of the whole family. The 9-week MEND program followed by a 12-week free-family swim pass engages families in a weight management process by addressing three essential mechanisms, education, skills training and motivational enhancement. The program consists of 18 sessions delivered over 2 hours group sessions held twice weekly in the evening. The sessions are divided into an introduction session, 8 sessions focusing on behaviour change, 8 sessions providing nutrition education and 16 sessions of physical activity followed by a closing session. To elaborate, the sessions on nutrition education explore healthy eating advice and tips for obese children by setting weekly targets, understanding the labels on foods and drinks and other guidelines for changing dietary habits.

The behavior change sessions consist of teaching families to apply techniques to reinforce behavioural change such as goal setting and response prevention all to provide a healthy home environment. The physical activity sessions include 1 hour of exercise for only the children comprised of non-competitive group play. These sessions are held in

community and primary care settings such as sports centers and schools, taught by two MEND leaders and one assistant. To ensure proper information is being delivered, trainers were provided with essential and detailed manuals, resources and handouts with detailed methods to deliver in their sessions.

Based off the Bite Size documentary, Moy, 11 years old, joined the MEND program with the support of his parents. After the nutrition sessions, his mother began cooking healthier foods and Moy developed healthy eating habits and began reading labels before buying anything. The exercise sessions influenced Moy to play video games with movements instead of sitting and simply using your fingers. Data was collected by researchers at baseline, 6 and 12 months. The outcomes that were measured to evaluate the effectiveness of the intervention were: Anthropometry includes body weight, height, waist circumference, body mass index. Children were classified as obese if their BMI was greater than 98th percentile. Body composition is used to measure the children's total body water, fat-mass and fat-free mass. Cardiovascular fitness is assessed by the recovery in heart rate 1 minute after a validated 3-min step test. Also, with the help of an automated blood pressure monitor, systolic and diastolic blood pressure was measured. Levels of physical activity, inactivity and the amount of sedentary behaviors were assessed using a survey administered by the researchers of the MEND program to the parents and children. Questions included the number and duration of physical education, the time spent on different types of dynamic and indolent activities. Self-esteem was assessed using the

Harter Self-Perception Profile, a manual with five specific self-concept subjects, scholastic competence, athletic competence, social competence, physical appearance and behavioural conduct. Socioeconomic classification was evaluated based on the occupation of the parent providing the main financial support of the whole family, and ethnic background were obtained from the parents.

The main results of the study refer to the 116 children that participated, 60 placed in the intervention and 56 in the control group. The main crowd was non-white backgrounds with parents in manual professions. For the intervention group, 54 out of 60 children completed the intensive phase, the 9-week program. The attendance rate of the program was 86% and 32% of the families used the free-swimming pass on average 5 times along the 12 weeks given. The results of the study at baseline were similar for both groups regarding waist circumference, body mass index, systolic and diastolic blood pressure, hours of physical activity per week and global self esteem. There was no difference at baseline between those who started right away and those who started after 6 months. At 6 months, according to the findings of the study, the control group data did not change as much as the intervention group. To explain, the anthropometry including, waist circumference and BMI, were less in intervention (-4.1 cm and -1.2 kg/m²) than control after the 6 months. The blood pressure remained similar. However, the intervention group increased its hours of physical activity per week, with more hours than the control group. Also, slight difference in global self-esteem score with the intervention group scoring slightly higher

than the control group. After 12 months, the results indicate higher reductions in waist circumference and body mass index in both groups. Blood pressure remained similar for both groups. Physical activity per week slightly increased as well as global self-esteem score. In conclusion, it didn't matter whether you attended after 6 months or right away, both periods had reductions in anthropometry, increased cardiovascular fitness.

A strength of the study that helped address the problem of obesity in children and ensure the effectiveness of the randomized controlled trial is the inclusion of families. Both parents and children attended the educational and physical activity sessions and were provided with the same amount of information. This is a strength because a limitation of the study intervention is that the efficacy of the intervention is carefully controlled and evaluated under certain conditions and environments, therefore there is no evidence on how well the treatment will work elsewhere. However, by having the families involved and participating they can help their child at home by cooking healthier meals, reminding them to exercise, etc. The parents become the investigators at home which ensures progress towards healthy body composition. Similarly, after Moy attended the MEND program with his family, his dad bought him a video game involving physical movement.

Another strength of the study are the multiple different outcome measurements specifically the focus on factors excluding physicality such as self-esteem, mental health and behavior modification. Obesity is commonly assessed using body mass index and weight greater than 85 percentile. To strictly focus on nutrition, weight and physical activity prohibits the focus on

psychological and emotional issues that can accompany excess weight. Psychological factors coexist with excess weight and may cause harm to those who are affected by obesity. However, this study measured self-esteem score and discussed the fears of how improving solely physical health of those who are obese will produce psychological consequences. This study proved that psychological well-being and increase in self-esteem provides confidence to children who are affected by obesity and helps them develop change.

A weakness of this study is the drop out of participants for population already small. Given that there was already a small number of participants, only 116 children, there continued to be a drop of participants. The number is not large enough to reliably detect differences in the desired and known outcomes. Therefore, losing participants consequently leads to fewer results and prevents proper measurements of the effectiveness of the program. To avoid a drop of participants before the end of the intervention, participants can sign a contract leaving a deposit of about 100\$-150\$. If they return for the follow-up session, unless there's an emergency preventing otherwise, they receive their deposit. Those who had valid reasons for missing can schedule for measurement another time. Small amount of people only 116 people did it, article that says you need more people in intervention.

Another limitation of the study is the 12-week-free-swimming passes. The study doesn't provide data and results on the effects of the swimming pass and it's limiting the families to only swimming and no other sport or physical activities. A better follow up process should've been issued to them to

ensure the MEND program was successful, such as providing gym access or group supports where they can freely discuss issues they've encountered. This allows the families to participate in a variety of activities depending on their hobbies.

Another weakness of the study is the failure to give importance to proper eating habits and diets, the nutrition sessions. The main focus of the study was ensuring BMI and waist circumferences were decreased and improving fitness and lifestyle as well as increasing psychological well-being and self-esteem. These are very important outcome measurements however every weight-loss study focuses more on the aspects that will help you long term such as a safe and balanced diet with all food groups; plans for weight maintenance after the weight-loss phase is over, self-monitoring your weight and behaviour change by keeping a record of everything you eat, etc.

Every weight-loss intervention emphasises proper dietitian plans with goals, however this study briefly mentioned them. There was also only mention of long-term effects in order to determine if the program worked, such as we can't assume it worked because there was no evidence long term, results long term wise, follow up was terrible.