

Obesity in Childhood and Interventions

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Abstract

Childhood obesity is a condition where excess body fat negatively affects the child's health and well-being. Childhood obesity has become a global issue and may results in the decrease in the life expectancy. While obesity in children is increasing across the world, minority of children living in urban areas are at higher risk of developing the condition. Due to the rise in obesity prevalence in children and its many adverse health effects it is recognized as a serious public health concern.

This project consists of some short interventions aiming at reducing the obesity in children by educating the caregivers and the rest of the family. The project will be focusing on the interventions that can be implemented in the prevention of continued obesity in children. The purpose of the project is to review the pediatric obesity treatment and with the objectives of determining which treatment can be effective. Though studies I have released that psychotherapy is the primary intervention.

Cardiovascular diseases and diabetes are some of hearth problems that affect children negatively, and there is evidence based intervention that can be used by the primary care givers to address the issue of obesity.

Psychotherapy, diet, physical activities and pharmacotherapy are all effective interventions in treating childhood obesity. I have selected this topic from the three blocks which are health assessment, health care delivery policy and quality outcomes and leadership and communication.

Keywords: *Obesity, childhood, body mass index, interventions*

Introduction

Childhood obesity is a serious medical condition that affects children and adolescent. Obesity occurs when the child's weight for age and height is above the normal. Psychological problems could result from this, due to change of body that could lead to low self-esteem and depression.

To reduce childhood obesity several strategies could be used to improve the diet and exercise habit of the whole family. Treating and preventing obesity in children could protect the health of the child from getting diseases that are secondary to obesity.

The number of children with obesity continues to rise in the US; out of five children one is overweight. The Body Mass Index (BMI) is acceptable for determining obesity in children two year and older, a measure of weight in relation to the height, used to determine weight status. The normal range for BMI in children varies with age and sex. Overweight is defined as having BMI at or above 85th percentile but below the 95th percentile, a BMI greater than or equal to the 95th is defined as obesity by Centers for Disease Control and Prevention. The US Prevention Service Task Force reported that not all the children with high BMI need to lose weight though.

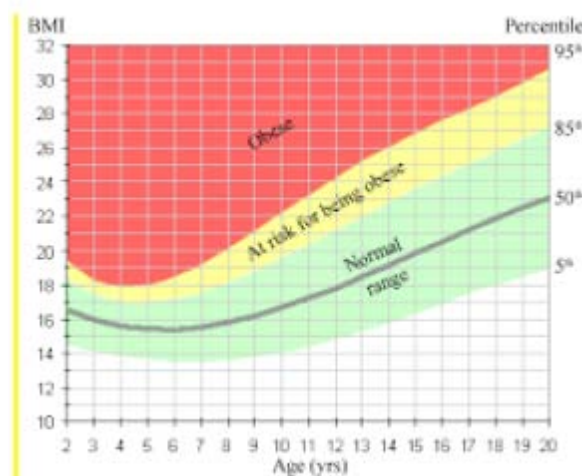
There are consequences that go with this issue. In addition, BMI may be mistaken, rule out some children who do have excess adipose.

"I n 2013-2014, 33.4% of children aged 2 to 19 were overweight, and 17.4% of those were obese", said the findings in the journal Obesity.

'In 2007 -2008 among children and adolescent aged 2 to 19 years old, 11.9% were at or above the 97th percentile and 16.9% were at or above the 95th percentile and 31.9% were at or above the 85th percentile for age and weight '. (Ogden et al. 2010).

There are various reasons for childhood obesity. The most common causes of childhood obesity are genetic factors, unhealthy eating habits, lack of activity, eating fast foods or could be a combination of all these factors. Children whose parents or siblings are overweight may run an increased risk of becoming overweight themselves. There are consequences that go with obesity for an individual which could be psychological and physically on a social level. High numbers in obesity pose a great threat on the health care costs since chronic conditions associated with obesity will increased. These conditions include cardiovascular diseases and diabetes and many others, hypertension, dyslipidemia, fatty liver, metabolic syndrome, sleep apnea and other significant co-morbidities.

Treating obesity is a two-step process which consists of assessment followed by treatment management as defined by the NIHs clinical guidelines. (NHLBI obesity education initiative expert panel, 1998). The strategies for weight loss include dietary therapy, physical activity, behavioral therapy, and pharmacotherapy and surgery intervention. When choosing which intervention (s) to use, consideration has to be taken not to use pharmacotherapy or surgical intervention before other means have been exploited, more conservative treatments should be fully utilized. The rationale of this project is to develop an effective obesity prevention programs that provide parents with knowledge and skills for healthy living in areas of nutrition, physical activity, body image and family communication.



Literature review

Dietary therapy overview

It is very important for the family to be involved in changing healthy food intake. The food choices that we make while we buy food and the way they are cooked matters a lot. Altered attitudes to meal time may be required. Healthier food intake may include the following;

- Not having soda and sweetened fruits drinks the fridge
- Using low fat dairy product
- Increasing amount of fruits and vegetables
- Stocking a range of low fat snacks that the child can enjoy
- Making time to eat breakfast
- Eating meal together as a family
- Drinking water with meals
- Planning non-food rewards for e.g. - toys, CD, outing to the park
- Taking packed lunch from home to school

Dietz suggest that “soda taxes should be increased so that people do not buy them to help them make healthier choices.” He also talks about “healthier choices easier choice”.

Dietary therapy implies a structured planned change in ones established meal pattern which include specific guideline for nutrient and energy intake. (Latzer 2008).

Physical activity overview

Interventions aimed at improving diet, increasing physical activity, and decreasing sedentary behavior form the foundation of childhood obesity prevention and management. Obesity result from an energy imbalance; that is energy intake exceeds expenditure. But the truth is there is no simple answer for treating obesity in youth. High level of physical activity could compensate for children’s excessive calorie or fat intake, but research has shown that there has been a marked reduction in levels of physical activity in children and adolescent. (Davison and Birch 2001). Higher level of physical activity and habitual exercise also has seen to reduce BMI in children.

Davison and Birch (2001) reviewed the complex factors involved in planning for children at risk for increases in weight status. They view this complex set of factors from an ecological systems theory perspective, which looks at their family, school and social context including society and community at large. The type of activity is also appears to be important for sustained weight loss. The time taken/spent on an exercise also counts for physical activity to be effective. While both forms of exercise helps to promote initial weight loss, the child or adolescent more likely to continue long term with the lifestyle form of activity. Walking, cycling, swimming, informal ball games and playing outside are the physical activities that the children could engage in to control weight. Obese children and their family should be encouraged to incorporate some opportunity for incidental activity into their everyday life style. Parents should be role models for their children, they should be involved too as a daily habit in the home, and they should be the social models for the children. Encouraging a decrease in sedentary behavior may be more effective than an increase in physical activity. Research shows that decrease in sedentary behaviors were associated with decrease in BMI (Davison and Birch 2001).

Changes in the school have negatively impacted activity levels in children, due to school budget physical education classes are not offered during school day.

In summary, these behavioral patterns including low levels of physical activity, high levels of sedentary behaviors and preferences for high fat, sugar foods together put weight gain in children. (Davison and Birch 2001). An increase in physical activity, decrease in sedentary behaviors while including child parents, school and community make the most effective intervention plan key elements in the fight against obesity in children. Parents and family involvement is crucial.

Psychotherapy treatment overview

The most studied intervention for childhood obesity is behavioral therapy.

The cornerstone in the management of an obese patient is therapeutic lifestyle intervention which includes restricting calories and simultaneously increasing physical activity. This combination has been known to produce a significant weight loss of up to 10% of the initial weight. To reinforce lifestyle changes, behavioral therapy (BT) has been incorporated into the

overall intervention in the belief that obesity is a result of maladaptive eating patterns and exercise habits. Behavior Therapy can help individuals who are predisposed to obesity to develop a set of skills that can help them to achieve a healthier. Some behavioral therapy used in weight loss includes the following; goal setting, self-monitoring, and stimulus control, problem solving and group interventions. Combined with behavioral therapy, low calorie diet and increased physical activity provide the most successful treatment for weight loss. Kalarchian et al found that family based behavioral weight control is effective for obese children. According to recent study published in quantity of life research, cognitive behavioral therapy can be effective in reducing obesity and increasing health related quality of life in children. Comprehensive behavioral treatments which focus on good eating patterns and physical activity have shown to be of great importance in weight control. Additionally, behavioral therapy is more effective when it uses such components as stimulus control, self-monitoring, and reinforcement of behavioral change and modeling of healthy eating behaviors.

Pharmacotherapy overview

Pharmacotherapy should be used together with other interventions and should be implemented fully, exploring the conservative treatment, lifestyle, behavioral and family based interventions. (NHLBI obesity education initiative expert panel, 1998). Pharmacotherapy methods are usually designed to do one of the three things, increase energy expenditure, suppress appetite and limit nutrient absorption (Latzner 2008). These medications are effective in reducing weight but are contraindicated in children. Pharmacology is an option available for extremely obese children older than 12 years of age who have not responded to 1 year dietary and lifestyle treatment as well as for those with impaired glucose intolerance or insulin resistance and a strong family history of diabetes, MI and stroke.

Surgical treatment overview

Bariatric surgery refers to surgical procedures performed with the intention of reducing weight. It can be performed by an open and a laparoscopic techniques, and the laparoscopic technique as currently become the more popular approach. The procedure has earned the reputation of being the gold standard, against which other procedures are compared. It has a restrictive and malabsorptive component. The main purpose of these surgeries is to reduce the size of the stomach either by implantation of a gastric band or removal of a portion of the stomach.

The gastric bypass provides a substantial amount of dietary restriction and the malabsorptive element is a result of bypassing the distal stomach, the entire duodenum, and varying in the length of the jejunum. The extent of the bypass of the intestine determines the degree of macronutrients malabsorption. After the surgery the child will have a small stomach and feel full or satisfied with less food and will not be able to eat much as before.

Severely obese adolescent ranging from 12 to less than 18 of years of age are considered eligible for bariatric surgery according to the National Institute of Health Adult Criteria. Bariatric surgery has been found to be safe in adolescence and has been associated with the significant results of weight loss, correction of obesity co morbidities and improved self-image and socialization (Sugerman et al, 2003).

Efficacious treatment defined

The efficacy of treatment must be demonstrated in controlled research in which it is reasonable to conclude that benefits observed are due to the effects of treatment and not to chance or confounding factors such as passage of time, the effects of psychological assessment, or the presence of different types of clients in the various treatment conditions. (Campbell and Stanley, 1963; Kazdin, 1992). The efficacy is best demonstrated in randomized clinical trials (RCTs), group designs in which patients are randomly assigned to the treatment of interest or one or more comparison conditions or carefully controlled single care experiments and their group analogues. This has gone unchallenged.

As is the case in research in general, replication is critical, particularly replication by an independent investigatory team. The requirement of replication helps to protect the field from drawing erroneous conclusions based on one aberrant finding. Replication by an independent team of investigators also provides some protection against investigator bias or reliance on findings that prove unique to a particular setting or group of therapists. Thus, only when a treatment has been found efficacious in at least two studies by independent research teams thus when its efficacy is considered to have been established and label it an efficacious treatment.

Methods used to conduct the treatment must be sufficiently sound, in order to justify reasonable confidence in the data. Finally, the treatment results must be of clinical significance, that is, the treatment condition must produce significantly greater effects than the comparison condition achieves (Chambliss & Holon, 1998). ESTs for treating pediatric obesity include nutritional education, increase in physical activity or decrease in sedentary behaviors, and support which involves both children and parents participating in group therapy (Herrera, Johnston, & Steele, 2004).

The purpose of the this project is to review pediatric obesity treatment that could be considered ESTs, with the objective of determining which treatments are effective and efficient, and the direction that future research could take, studies are grouped into sections based upon their primary interventions and all types of treatments. Methods included in this review are psychotherapy, dietary, physical activity and pharmacotherapy. Surgical interventions were also included for consideration but due to lack of ability to randomly assign participant and have a comparison group they were eliminated from the main portion of this review.

Methods

Study selection

I searched on internet explorer for childhood obesity and treatment. Studies concluded that the target population are overweight or obese children and adolescent and there are used interventions to aid them in losing weight. All articles selected for this review were required to report outcomes on at least one weight such as BMI, weight or percentage of body weight.

Result

Dietary therapy

The Traffic Light Diet was used to decrease energy intake and promote a balanced diet. Foods are categorized as red, yellow or green on the basis of their calorie and nutrient content. Green foods (e.g. fruit and vegetables) are very low in calories. Yellow foods (e.g. yogurt, 2% milk) are higher in calories and include the dietary staples needed for a balanced diet. Red foods (e.g. potato chips, candy) are foods higher in calories with low nutrient density. Children and parents were instructed to consume between 1000 and 1200 calories per day, and to maintain nutrient balance. When participants, weight decreased to the non-obese range, they were instructed to eat an additional 100 calories per day for a week at a time until weight gain occurred, and they should attempt to maintain the caloric values associated with weight maintenance. Non-overweight parents had no caloric restriction, but were asked to limit red foods. Families were provided with additional nutritional information, including reading food labels and shopping.

Physical activity

An increase in physical activity either programmed activity or lifestyle activity, done at moderate intensity or higher emphasized. Physical activities done as a required part of the work or school day were not included. Physical activity goals began at 30 min per week and increased by 30 min according to how the child could tolerate, and increased each time the

goals were met, with 180 min per week performed at moderate intensity or higher representing the highest activity goal.

Psychotherapy

Studies identified that psychotherapy is the main intervention for treating obesity. Doyle et al. (2008), randomized eighty adolescents aged 12 to 17 who were above the 85th percentile for BMI. Usual care participants received handouts containing basic information on nutrition and physical activity. There was a 16 week Internet delivered program using cognitive behavioral therapy to increase body image, basic health education, and guided behavioral modification. Participants were instructed to spend 1 to 2 hours per week on this Internet program, and adiposity measurements were taken at baseline, post intervention, and a 4-month follow up.

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Pharmacotherapy

The usefulness of certain drugs depends upon the co morbidities present. The use of these drugs is not recommended due to potential side effects. However, people do occasionally use these drugs illegally; they buy them over the counter.

Anthropometric measurements

Body mass index was calculated using the subject height and weight ($BMI = kg/m^2$). BMI changes reliably with age during development, so that the raw BMI value must be compared to population standards to interpret changes. In addition, percentage overweight was calculated by BMI at the 50th BMI percentile for age and gender. Anthropometric data were collected pretreatment and at 6 and 12 months post randomization.

Conclusion

Obesity in children and adolescents has become a global epidemic, and it is an increasingly important issue as it poses major health risks of chronic diseases. Obese children are more likely to become obese adults and thus more likely to have health risks associated with obesity beginning in their youth and continuing on into their adulthood (Center for Disease Control and Prevention, 2011). Life expectancy trends of humans during the past thousand years have been characterized by a slow, steady increase (Olshansky et al., 2005). For the first

time our children, grandchildren, and young adults may have a shorter life expectancy than those adults today, reducing the length of life of severely obese by an estimated 5 to 20 years (Olshansky et al., 2005). There has been an increase in the prevalence rate of type II diabetes in children, which is a disease with complications that are both life threatening and life shortening by approximately 13 years (Olshansky et al., 2005). Overall psychotherapy, diet, physical activity, and pharmacotherapy are all effective interventions in treating youth obesity, when evaluated using established criteria for empirically supported treatments (Chambliss & Holland, 1998).

A combination of all these factors could bring better results. Parents should take their children for child health days where they could screen and problems identified early. Parents should play a pivotal role in prevention of obesity in their children by carrying out interventions aiming at reducing weight. Parents should be role models and is them who provide for their children so they must know what to bring home as food and make sure they are cooked properly and eaten in a good manner. One lecturer has once said “people dig their own graves with their own teeth,” because of food choices.



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