

Nutritional counseling on modifying lifestyle practices of obese children.

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Abstract

Worldwide prevalence of childhood obesity dramatically increases every year. To combat this obesity, parents play a key role. The present study focuses the effectiveness of nutritional counselling to prevent childhood obesity by assessing the lifestyle practices of obese children. Experimental research design with stratified random sampling method 150 obese school children (age group of 6-12 years) parents were called for interview to assess the lifestyle practices of their children. Nutritional counselling was given to the parents in 3 sittings and at the end of 6th month post assessment done. Statistical significance calculated by using one-way analysis of variance and student independent t-test. The study finding reveals more number of obese children in the age group of 6.1-8 years (39.19%). Their birth order two (56.66%) and two child family norm (71.67%). The obese children mother's education was mostly higher secondary standard (42.50%) and was homemaker (78.33%). All obese children consuming non-vegetarian food and their frequency of intake is thrice a week (40%). The life style practices of obese during pre-test were poor (53.33%) and after nutritional counselling 65.83% of them scored good practice and 34.17% of them scored moderate practice. Nutrition counselling was very effective to parents of obese children who help them to adapt the healthy lifestyle practices preventing the obesity among children and prevent the increasing risk of obesity and chronic diseases in adult.

Keywords: Obesity prevention, Childhood obesity, Lifestyle practices, Nutritional counseling.

Accepted on December 01, 2020

Introduction

Overweight and obesity is one among non-communicable diseases which will increase the morbidity among children and adolescents. The excess body fat is otherwise termed as obesity in terms of height and weight [1]. The term obesity defined and quoted over 95th percentile, but overweight is quantified between 85th and 95th percentile as per Indian study [2]. World Health Organization (WHO) report on obesity shows that worldwide obesity has tripled since 1975. The obesity threshold with BMI beyond 30 was observed in nearly 108 million children. The two largest population in the world viz., China and India were compared for obesity, where China leading with 15.3 million obese children. According to the latest statistics children and adolescent of age 5-19 were estimated to be over 400 million. The prevalence was increased from 18% in 2016 to 26% in 2018. This rise was noted equally among both girls and boys [3].

The Prevalence of childhood obesity shows that overweight increased from 9.7% to 13.9% between 2001 and 2010. The overweight and obesity were on the rising trend from 19.3% (2010) to 23.5% (2016). Hence, uphill trend of overweight and obesity among children/adolescents were noted [4]. Dramatic increase of prevalence of obesity mainly because of consumption of high calorie and high density foods, unhealthy food choices, physical inactivity, unhealthy lifestyle practices, over stress, poor parenting, parent lifestyle influences, lack of playground, media, school society influences and genetic

factor [5]. Childhood obesity has been much correlated with diet and exercise, and the complex relationship between them and lifestyle practices indicate the significance of interventions [6,7]. The sedentary behaviors are highly associated with risk of mortality and psychological issues [8, 9]. The role of the parents played a pivotal point in promoting physical activity and eliminating sedentary lifestyle, by converting home environment and reducing the screen time [10,11].

The childhood obesity around the world is controlled by adopting proper intervention at school level along with diet and physical exercises [12]. Systematic reviews of childhood obesity prevention studies proved that interventions at school level was highly effective [13,14]. Educational interventions included behavioral change, nutrition, and physical activity is reckoned as a key tool to prevent being overweight and obesity, it significantly reduced body mass index (BMI) in obesity children [15].

The studies were conducted to assess the lifestyle practices of obese children with age group of 6-12 years among parents. The researcher interest is to give counselling to the parents of obese children about the healthy food, importance of avoiding junk food, adequate sleep and rest and finally the leisure and physical activities to the children to promote the healthy lifestyle practices. The effectiveness of nutritional counselling to change the lifestyle practices of obese children was also analyzed.

Materials and Methods

The research was quantitative in approach with experimental study which was conducted during 2017-2018. Total, 1256 school children with the age group of 6-12 years were screened for obesity, of which 209 children were obese. With the help of stratified random sampling method, 25 students from class I to VII were chosen and their parents were called for interview at school premises. The questionnaire has four domains such as healthy diet, avoidance of junk food, sleep and rest, leisure and physical activity. The overall practice score was classified as poor, moderate and good practice based on the score obtained by the study participants.

Inclusion criteria

- Obese children of 6-12 years
- Obese children of 90th percentile and above
- Parents willing to participate in the study

Exclusion criteria

- Obese children with the history of hereditary
- Chronic illness

Nutritional counselling was given to parents of obese children, to change the obese children lifestyle practices. Age proper sample menu plan such as calorie and nutrients based on Recommended Dietary Allowances (RDA) according to the age was distributed to the parents for providing proper diet with adequate calorie to their child. Followed by two counselling was given in weekly interval. After the last counselling, six-month follow-up was done to assess the children lifestyle practices in line with assessment conducted before counselling, to find the effectiveness of nutritional counselling on modifying the lifestyle practices preventing childhood obesity among parents of obese children.

Analysis was done using IBM “Statistical Package for the Social Sciences” (SPSS) version 16 and Software for Statistics and Data Science (STATA) version 10 and Statistical Software for Epidemiology (Epi info) Version 3.5.1. Demographic variables in categorical/dichotomous were given in frequencies with their percentages. Practice score was given in mean and standard deviation. Quantitative variances between pre and post-test were measured by paired t-test. Qualitative dissimilarities between pre and post-test were evaluated using McNemar’s test. Effectiveness of the study was given in mean with 95% confidence interval and percentage with 95% confidence interval. Association between practice gain score with demographic variables was computed by one-way analysis of variance F-test and student independent t-test.

Results

In this study, 39.19% of obese children are at the age group of 6.1 to 8 years. With regard to standard of education, when compared to other standard, 18% of obese children are studying in class five. Regarding gender distribution, equal percentage (50%) of distribution were seen on both the sex. 71.67% of obese

children family has two children with birth order two (56.66%) and they are residing in urban sectors (88.33%). With regard to father education, 26% of fathers are graduate or post-graduate, about mother’s education, 42.50% of them were studied higher secondary. 38.66% of fathers are unskilled worker but mothers are homemakers (78.33%). All children diet pattern was non-vegetarian and 40% of obese children are consuming non-vegetarian thrice a week.

In pre-test, the lifestyle practice of obese children was 51.50 ± 6.98 and the mean percentage was 47.69%. The domain wise mean and standard deviation (SD) calculated as follows, Healthy Diet (HD) 16.50 ± 3.08 , Avoidance of Junk Food (AJF) 17.71 ± 4.74 , Sleep & Rest (S&R) 5.18 ± 1.69 , and Leisure & Physical activity (L&PA) 12.12 ± 2.53 . The Figure 1 shows the mean percentage of domain wise lifestyle practice score of obese children during pre and post-test. The nutritional counselling the lifestyle practice score was way ahead. The overall mean and SD was 79.51 ± 4.70 and the mean percentage was 73.62%. The domain wise post nutritional counselling mean and standard deviation were HD 26.13 ± 3.21 (Mean percentage 72.58%), AJF 26.68 ± 3.42 (Mean percentage 80.85%), S&R 7.48 ± 2.08 (Mean percentage 83.11%), L&PA 19.23 ± 4.03 (Mean percentage 64.10%). The Figure 2 depicts the overall pre and post-test life style practice score of obese children. From the Table 1 significant difference in pre and post-test lifestyle practice score with the t value of 38.43 at $p=0.001$ level were highlighted. The extended McNemar’s test was calculated for qualitative purpose, the result was shown with the significance $\chi^2= 51.02$ at $p=0.001$.

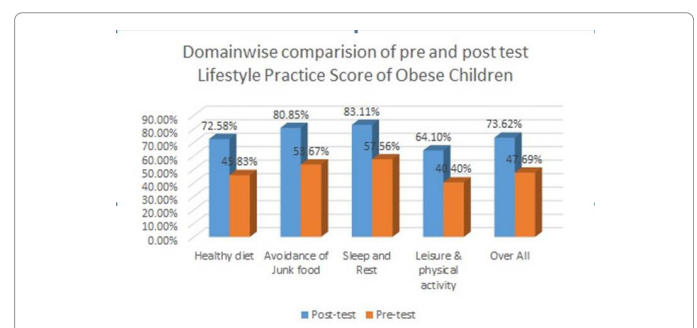


Figure 1: Lifestyle practice score of obese children on pre and post-test domain wise.

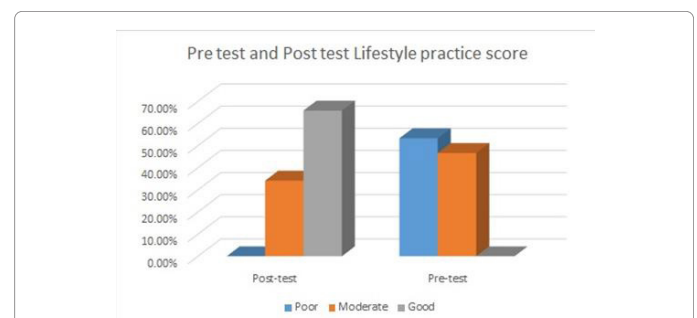


Figure 2: Lifestyle practice scores on Pre-test and Post-test.

The effectiveness of nutritional counselling were analyzed, and noted the significant mean difference and mean percentage of

lifestyle practice score at 95% Class Interval (CI) between pre and post-test were 28.01 (26.56-29.45) and 25.93% (24.59-27.27). The association was found between life style practice gain score and demographic variables such as age (F=3.12, P=0.05), education (F=2.49, P=0.02), children strength in family (F=3.08, P=0.05), birth sequence (F=3.91, P=0.03), mother education (F=2.46, P=0.05) and occupation (F=2.83, P=0.04).

Table 4: Pre-test and post-test mean life style practice score of obese children.

Life style practice on	Pre-test		Post-test		Mean difference	Student paired t-test
	Mean score	SD	Mean score	SD		
Healthy diet	16.5	3.08	26.13	3.21	9.63	t=25.91P=0.001***(S)
Junk food	17.71	4.74	26.68	3.42	8.97	t=19.57P=0.001***(S)
Sleep and Rest	5.18	1.69	7.48	2.08	2.3	t=9.77P=0.001***(S)
Leisure & physical activity	12.12	2.53	19.23	4.03	7.11	t=16.39P=0.001***(S)
Total	51.5	6.98	79.51	4.7	28.01	t=38.43P=0.001***(S)

Discussion

The results revealed the effectiveness of nutritional counselling on modifying the lifestyle practices of obese children to prevent childhood obesity. During pre-test, level of practice score were poor (53.33%) and moderate (46.67%) but after the nutritional counselling their post-test score level were moderate (34.17%) and good (65.83%). Social learning theory is well explained, change in parent’s behavior primes to modification in child’s deed [16]. Inclusion of parents as vigorous applicants with their children lead to marked improvement in weight control on long-term basis [17].

The children regularly ate take-away foods and fast food, indicating unhealthy dietary practices. The type of food consumed by school children can be oriented by advising a proper dietary pattern and with the help of nutritional campaign program. A school-based nutrition education campaign could have a positive impact on choices of food consumed. Obesity prevention and treatment can be linked on reducing the television screening there is a strong association between adiposity and high calorie intake of carbonated beverages [18]. According to “American Dietetic Association” obesity of children is directly linked to sweetened beverages which were supported in terms of reliable study, high and large quality data. Regular interview, motivation on change of diet plan and physical exercise in adult, started showing the reduction in obesity and treatment in children [19]. A decrease in BMI-z scores were noted in children from the study conducted by childcare health professional nurse on day-care teachers and parents [20]. A multidisciplinary approach (nutrition education/counselling, physical activity) is the most effective strategy to promote lifestyle changes and endorses that family association and noble support are the main reasons for healthier path [21-23]. Significant changes were illustrious before and after execution of nutrition counselling based on habits change on individual nutrition [24].

In one of the study the effective weight loss after nutrition counselling were noted and was due to counselling technique based on the stepwise behavioral change [25]. Thus, over all the study suggested that nutrition counselling was very effective in reducing the weight of obese children. Counselling should be given not only to the parents but also to the children of vulnerable group to understand and set the goal to reduce

obesity and to promote the healthy lifestyle behavior pattern.

Conclusion

Healthy lifestyle practices promote the health status of the person. Parents are the real role model for their children. Parent lifestyle changes for adherence of healthy food choices, eating in, regular family meal timings, daily exercises and physical activity, less time on screen, avoidance of junk food, and sleep hygiene bring changes in children lifestyle practices. This nomenclature not only is followed by parents of obese children but also to all parents to keep healthy lifestyle practices and to promote good health status. Nearly 1/3rd of time children are in school, teachers also should take part to promote healthy lifestyle practices among children. Parent centric and school based intervention are very important to curb the obesity among school children.

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