Impact of Nutrition Intervention on overweight and Obesity among Adolescents

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Abstract

Background: Worldwide prevalence of overweight and obesity among children and adolescents aged 5-19 has risen dramatically from just 4% in 1975 to just over 18% in 2016. Over 340 million children and adolescents were overweight or obese in the same year, according to WHO. Besides, also in Bangladesh the rate shows an upward trend. From 0.3% in 1975 which turns into 9% in 2016 according to the Global Health Observation 2022. Overweight and obesity in Adolescents can be caused several health challenges including Non-communicable Diseases.

Objective: To control overweight and obesity among adolescents with Nutrition intervention.

Methods: In total, 314 adolescents both girls and boys with overweight and obesity (BMI> 25) aged 10-19 were selected and divided into intervention group and control group. 157 samples of the Intervention Group were provided Nutrition Intervention which included nutrition education (about the nutrients and harmful effects of deficiencies and excessive eating), diet modification (Carbohydrate 45%, Protein 30%, Fat 25%), exercise (both indoor and outdoor) and restrictions (about sugar consumption, sleep pattern, fast food allowances, screen time allowances). The intervention period was 3 months. After every 1 month of this period, data was collected and compared with the baseline data.

Results: In the baseline data there was no significant difference between the intervention group and control group. But in the endline data, the results between the intervention group vs control group are in the major variables such as the mean BMI (26.5 vs 27.8), mean total calorie intake (1460.08 vs 1610.67 cal.), the mean exercise per day (hours) (1.75 vs 0.44), the mean screen time (1.67 vs 2.83hr), the mean junk food consumption per week (2.19 vs 3.69), the mean time spent lying or sitting (without sleeping) (1.91 vs 3.18), the mean time played sports per week (3.29 vs 2.4) had a significant difference(p value>0,001, Mann-Whitney test). The mean weight of the intervention group at baseline and endline is 70.34±10.63kg vs 67.06±10.65kg. After 3 months of intervention, weight had reduced by approximately 3 kgs and PAL had increased from 0.21 hours to 1.5h in the intervention group, whereas in the

control group the weight had increased by approximately 2 kgs and the PAL had remained the same within the 3 months. Besides, knowledge about Nutrition Education has increased from 5% to 96% in the intervention group.

Conclusion: After 3 months of intervention, approximately 3 kg weight loss had been noticed as well as positive changes in their lifestyle, food habit, behaviour and physical activity level were also observed which was consistent and sustainable. In conclusion, a significant amount of weight loss is possible through a long time follow-up of the provided intervention.

Keywords: Adolescents, BMI, Overweight and obesity, Physical activity level (PAL), Non-communicable diseases (NCD), Intervention.