

Executive Summary

The World Health Organization (WHO) describes overweight and obesity as one of today's most important public health problems in developed and in developing countries undergoing economic and nutrition transition. The prevalence of overweight and obesity among children and adolescents has significantly increased in developed and developing countries during the past two decades. This trend is of serious concern, given the consequences that are associated with childhood and adolescent obesity both during adolescence and adult life. The most significant long-term consequence of childhood and adolescent obesity is its persistence into adulthood with all the attendant health risks. In view of this, assessment of prevalence of overweight & obesity and its predictors among urban adolescent school children, aged 12-17 years in the 3 regions of Andhra Pradesh, was carried out on 8,142 (4374 boys) in the year 2006-07.

In the present survey, the total number of adolescents covered was 9,129. Out of these, 8,142 were considered for analysis and the remaining 987 were either >12 years or ≤18 years. Further, 237 adolescents were not cooperated for anthropometric measurements. Out of 448 overweight and obese adolescents, 314 were covered for information on life style practices, food habits and measurement of blood pressure etc. However, about 92 adolescents were absent on the subsequent days of survey and 42 children have not cooperated

It was a cross sectional and nested case-control study, adopting multistage stratified random sampling procedure. Anthropometric measurements, viz., height (cm) and weight (kg), arm, waist and hip circumference (cm) and skin fold thickness (mm) were taken using standard equipment and procedures. Information on household socioeconomic and demographic particulars, the perceptions and practices on diet and life style patterns, physical activities and frequency of consumption of various foods was assessed using pre-tested questionnaires. Obesity and overweight was defined using BMI for age and sex percentiles. Multiple logistic regressions was carried out to identify the sensitive predictors for overweight and obesity,

A majority of the adolescents (43.5%) studied belonged to backward communities. In about half of the cases (51.1%) the occupation of the father was either service or business, and about 20% were illiterate. About two thirds of adolescents (60.7%) were living in pucca houses and was using LPG as cooking fuel. About four-fifths of the households (80%) possessed television sets in their houses.

The mean BMI was significantly higher among the girls compared to boys in all the age groups. The overall prevalence of overweight and obesity was 5.7%, while it was significantly ($p < 0.05$) higher among girls (7.1%) compared to boys (4.4%). The prevalence was significantly ($p < 0.001$) higher among adolescents studying in private institutions (9.6%), compared to government institutions (2.4%), and among those with high socioeconomic status (9.6%) compared to low socioeconomic status (2.1%). The proportion of adolescents participating in the

outdoor games and sports was significantly higher (66.7%) among control group as compared to cases (54.5%), while the proportion of adolescents, who participated in the household activities, was marginally lower among cases (70.4%) as compared to control group (77.2%). The proportion of adolescents watching TV was similar between groups, while the average duration of TV watching was significantly higher in cases (1.4 hrs/day) as compared to controls (1.2 hrs/day). The proportion of adolescents, who used scooter/car as mode of transport to go to school/college was significantly higher among the case as compared to control group. Participation of adolescents in out door games and sports for ≥ 6 hrs/week was significantly higher among the control group as compared to cases. The adolescents, who reportedly watching television for ≥ 3 hrs/day was significantly higher among cases as compared to controls.

The consumption of fast foods such as burgers, noodles and oily foods like chapatti was significantly ($p < 0.05$) higher among the cases compared to the control group, while the intake of milk, buttermilk, fish curry and Pulihora rice was significantly higher among the control group as compared to the cases. The prevalence of hypertension (JNC Criteria VII) was significantly ($p < 0.05$) higher among the overweight and obese adolescents (8.3%) as compared to control group (3.7%). Significant gender differentials were observed in the prevalence of hypertension among cases (Boys: 10.4%; Girls: 6.7%) as well as controls (boys: 7.8; girls: 0.6%).

Multivariate logistic regression analysis revealed that the risk of overweight and obesity was 3 times higher among the adolescents, who have not participated in out door games and sports, 2 times higher among those who participated < 6 hrs/week, 1.5 times more among who belonged to high socioeconomic status, 2 times among adolescents, who have not participated in household activities and/or participated < 2 hrs/day and 2 times, who were watching television ≥ 3 hrs/day.

The prevalence of overweight and obesity among adolescents was marginally higher in the Telangana region (6.8%) as compared to Rayalaseema (5.4%) and Coastal Andhra (4.8%). It was more among the adolescents of high SES groups (9.6%) as compared to the adolescents of low SES ($< 2.4\%$). The extent of participation in physical activities, such as out door games/sports, household activities and physical exercises was significantly negatively associated with prevalence of overweight and obesity.

A significantly higher proportion of adolescents attending private educational institutions were taking part in outdoor games ($p < 0.05$) like lawn tennis and were practicing yoga and meditation ($p < 0.01$) compared to children / adolescents of government institutions.

These results suggest that there is a need to encourage adolescents for increased physical activity and to change their food habits. Promotion of healthy food habits, life style practices and regulated TV viewing could go a long way in preventing obesity and overweight. An overall health promotion approach (a life cycle approach) is what is needed with a focus on health promoting schools, which will comprehensively address these and other challenges.