

# DIETARY INTAKE, PHYSICAL ACTIVITY LEVEL AND BIRTHWEIGHT BETWEEN OVERWEIGHT AND NORMAL-WEIGHT GRADES 4-6 PUBLIC SCHOOLCHILDREN IN MAKATI CITY

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## ABSTRACT

**Background:** The increasing prevalence of obesity in the country and the epidemiologic shift from undernourished children to overweight children are emerging public health concerns. Therefore, factors associated with obesity must be identified to decrease, if not stop, the escalating numbers of overweight children. **Objective:** To determine the association rates of Body Mass Index (BMI) with dietary intake, physical activity, and birthweight among Grades 4-6 public schoolchildren in Makati City. **Methods:** The three (3) schools were identified based on the highest prevalence of overweight. The study participants were 360 Grades 4 to 6 students (179 Boys and 181 Girls) from three public elementary schools in Makati City. The City was selected based on its having one of the highest prevalence rates of overweight public elementary schoolchildren among the cities and municipalities in the National Capital Region. The study utilized a case-control design with overweight schoolchildren as cases and normal-weight schoolchildren as controls. Children were classified as Normal and Overweight based on the BMI using Must et al. cut-off points. The dietary intake was obtained using 24-hour food recall on three occasions: start, middle of the week and on a weekend. To determine the usual food pattern, a food frequency questionnaire was administered. To examine the level of physical activity of respondents, a physical activity questionnaire was administered in three different occasions, namely: PE day, non-PE day, and a weekend day. Hours spent being sedentary like watching television and playing computer or video games were also explored. The computed number of hours for watching TV was based on the recall of respondents in each of the interview period. Birthweight was classified into three groups, namely: Small for Gestational Age (SGA) if weight is <2500g, Average for Gestational Age (AGA) if weight is within 2500 to 3499g, and Large for Gestational Age (LGA) if weight is >3500g. Descriptive statistics included mean and SD when data were normally distributed and median when data were skewed. The association of BMI with dietary intake, physical activity, and birthweight, was analyzed using logistic regression. **Results:** Overweight respondents had higher intake of carbohydrates, protein, and fats than normal-weight children. Except for calcium, both groups of children had adequate intake of the energy and nutrients – protein, vitamins A, and C, thiamin, riboflavin, and niacin. Intake of iron was more adequate among overweight participants than among their normal-weight counterparts. Both overweight and normal-weight children consumed a diet high in fat and sugar. Normal-weight children were more physically active than overweight children with mean activity scores of 6.82 and 2.76 points, respectively. Overweight children spent more time watching television and playing computer or video

games than normal-weight children. When physical activity was held constant, children consuming a diet that is more than 100 percent of their energy requirement were found to be six times more likely to be overweight than children consuming less than or equal to 100 percent. Children with low physical activity (<5.00 points) are 33 times more likely to be overweight than children with high physical activity (>5.00 points) regardless of age, gender, and dietary intake. In this study, gender was found to be a probable effect measure modifier in the association between birthweight and being overweight. This means that boys who were born small or large for their gestational age were 1.85 and 1.53 times, respectively, more likely to be overweight than boys who were born average for gestational age. Girls who were born small or large for their gestational age were 1.41 and 1.93 times, respectively, more likely to be overweight than girls who were born average for gestational age.

**Conclusion:** The dietary intake and physical activity of the child are associated with being overweight. Gender on the other hand, may influence the association between birthweight and being overweight. **Recommendation:** It is recommended that: (1) healthy dietary behavior and physical activity be promoted at home and in school. This includes healthy food choices, increased consumption of fruits and vegetables, and decreased intake of fatty and sugary foods; (2) parents limit children's TV watching to not more than two hours per day and encourage them to engage in moderate and vigorous physical activities in most days of the week; and (3) further studies be undertaken involving a large sample size to determine whether gender does influence the association between birth weight and nutritional status.

