Prevalence of Childhood Obesity Among Asian and Pacific Islander Sub-ethnic Groups – Among 5th, 7th, and 9th Grade Public School Students in Los Angeles County, 2006-2007
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Introduction
Childhood obesity has become a commonplace condition in the United States, the effects of which are multiple, debilitating, and costly. Obesity has been associated with numerous chronic conditions such as hypertension, diabetes, cardiovascular disease, hyperlipidemia, and certain cancers, all of which are appearing with increasing frequency in young adults and children. The early onset of these chronic conditions, coupled with the rise in childhood obesity, may lead to more severe or protracted deterioration of health during the adult years, including more years of potential life lost, decreased quality of life and increased healthcare costs. According to the Centers for Disease Control and Prevention (CDC), nationally, over 125 million (17.1%) of children aged 2-19 were obese in 2006-07. A higher percentage of 5th grade students was obese (26.6%) compared to their older counterparts in the 7th (22.6%) and 9th grades (19.1%). Obesity among 12th grade students (23.7%) was classified as overweight or obese in 2006-07.

Differences in prevalence of obesity are well known among race and ethnic groups. There are many factors that contribute to this difference, including genetic predisposition, lifestyle, age, socioeconomic status, and cultural behaviors. These ethnic elements are also major influences on diet, physical activity, and obesity. Currently, the available data do not allow for meaningful comparisons at the level of sub-ethnic groups, and collection of ethnic data at this level is infeasible for many reasons.

Methods
Data were obtained from the California Department of Education (CDE) for the 2006 and 2007 school years with a focus on the FITNESSGRAM® tool called the FITNESSGRAM® (administered every spring in California public schools), which is designed to measure aerobic capacity, body composition and muscular strength, endurance and flexibility. The variability reflected in the Pacific Islander demographic was even wider than that of other sub-ethnic groups, and 42% or 2 in 5 students (23% obese) were classified as overweight or obese in 2006-07. Ethnicity (CDE, 2005) was categorized into sub-ethnicities as shown in Figure 3. Similar analyses were conducted for aggregated groups detailed in Figure 3. The Chi-Squared test for heterogeneity was used to test for differences among sub-ethnic groups.

Results
The prevalence of obesity among all 5th, 7th, and 9th grade students in 2006-07 was 23.7%.

1. Boys were more likely to be obese (24.3%) than girls (22.9%).
2. A higher percentage of 5th grade students was obese (26.6%) compared to their older counterparts in the 7th (22.6%) and 9th grades (19.1%).
3. Students with Asian or Native Hawaiian/Other Asian Ethnicity (CDE, 2005) were more likely to be obese.
4. Significant heterogeneity among API subgroups was found (p<0.01).
5. The prevalence of obesity was 12.1% among Asians and 26.5% among Pacific Islanders (Figure 2).
6. The prevalence of obesity among all 5th, 7th, and 9th grade Asian and Pacific Islander students in a more culturally aggregated Ethnicity (CDE, 2005) was 23.0%.
7. Higher percentage of 5th grade students was obese (26.6%) compared to their older counterparts in the 7th (22.6%) and 9th grades (19.1%).
8. While the variability reflected in the Pacific Islander demographic was even wider than that of other sub-ethnic groups, 42% or 2 in 5 students (23% obese) were classified as overweight or obese in 2006-07.

Conclusion
Upon analysis of disaggregated ethnic data, childhood obesity prevalence was found to be significantly greater among Asian and Pacific Islander sub-ethnic groups compared to white students, with Japanese at 4.8%, a stark contrast to the higher prevalence seen among Filipino, Taiwanese, and Cambodian at 17.5%, 16.2%, and 16.5%, respectively. The variability reflected in the Pacific Islander demographic was even wider than that of the Asian demographics, ranging from a low of 17.2% among Guamanian to a high of 40.0% among Samoan. In other words, nearly 1 in 2 Samoan 5th, 7th and 9th graders in Los Angeles County were obese in 2006-07. Without disaggregating race/ethnicity, the disparities among sub-ethnic groups would go unnoticed.

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Prevalence of Obesity Among Asian and Pacific Islander Students

- 5th grade: 26.6%
- 7th grade: 22.6%
- 9th grade: 19.1%

Prevalence of Obesity Among All Students

- 5th grade: 23.0%
- 7th grade: 22.6%
- 9th grade: 19.1%

Prevalence of Obesity Among Aggregated Ethnicities

- Asian: 23.0%
- Pacific Islander: 23.0%

Prevalence of Obesity Among Regional Aggregate Ethnicities

- Asian and Pacific Islander: 23.0%

Prevalence of Obesity Among disaggregated ethnicities

- Japanese: 4.8%
- Filipino: 16.1%
- Samoan: 40.0%
- Other Pacific Islander: 16.5%