

PATTERN OF CONSUMPTION OF SUGAR-SWEETENED DRINKS AMONG ELEMENTARY SCHOOLCHILDREN ATTENDING PUBLIC SCHOOLS IN AMATITLÁN, GUATEMALA

Liza Díaz-Jereda^{1,2}, Raquel Campos Oliva², and Noel W. Solomons¹.

¹Universidad Rafael Landívar (URL) Guatemala City; ²Center for Studies of Sensory Impairment, Aging and Metabolism (CeSSIAM) Guatemala City.

ABSTRACT

Background: Although the consumption of sweetened drinks contributes to the energy requirements of children, high consumption of sugary drinks have been linked to the risk of chronic, non-communicable diseases.

Objective: To describe the sources, volumes and costs of sugar-sweetened beverages in a convenience sample of school-aged children from public schools in a suburban setting in the greater metropolitan Guatemala City area.

Methods: We recruited a total of 150 schoolchildren, 67 boys and 83 girls, from grades 1 to 6 in 4 elementary schools in the municipality of Amatitlán, 27 km south of Guatemala City. They were given crayons and a pre-formatted work booklet, along with instructions to make a pictorial record of each meal and snack over the following 24 h. Upon returning the booklets, participants were interviewed concerning the portion size of all items consumed. A full analysis of 24-h energy intake from all sources was compiled. With a focus on liquid items, they were classified into subgroups, and the packaging and nutrition labeling on each sugary drink reported was consulted to determine energy content and sales price.

Results: Median 1-day consumption of all liquids was 1628 mL, providing 479 kcal of energy, with 390 mL as non-caloric drinking water. Caloric density varied widely according to beverage group. The mean contribution of sweetened drinks was 428±237 kcal, representing 20.2% of the total daily energy intake. There were no significant differences in the pattern of drinks consumption between boys and girls. The most common beverage packaging was plastic bottles and Tetra Pak® cartons. The unit price by retail presentation ranged from Q.0.40 to 21.00. (\$0.05 to 2.76 USD).

Conclusions: Pictorial recording of diet is a promising approach for child nutrition. Carbonated soda beverages were not the major sweetened drink in this sample, but the calories from all sugar-containing drinks constitute a fifth of the reported energy for the single-day records.

BACKGROUND

The consumption of sugar-sweetened drinks begins in early years of life and continues through the school age¹. The availability of sugar-sweetened drinks in the market is leading to a quick nutritional transition characterized for a high consumption². Although the consumption of sweetened drinks contributes to the energy requirements of children, high consumption of sugary drinks have been linked to the risk of chronic, non-communicable diseases³.

OBJECTIVE

To describe the sources, volumes and costs of sugar-sweetened beverages in a convenience sample of school-aged children from public schools in a suburban setting in the greater metropolitan Guatemala City area.

METHODS

Setting: Four elementary schools in Amatitlán, 27 km south of Guatemala City.

Subjects: A total of 150 schoolchildren, 67 boys and 83 girls, from grades 1 to 6.

Data collection: They were given crayons and a pre-formatted work booklet, along with instructions to make a pictorial record of each meal and snack over the following 24 h. Upon returning the booklets, participants were interviewed concerning the portion size of all items consumed. A full analysis of 24-h energy intake from all sources was compiled.

Data Handling: Data was focus on liquid items, they were classified into subgroups, and the packaging and nutrition labeling on each sugary drink reported was consulted to determine energy content and sales price.

Data analysis: SPSS Version 20 was used to analyze data. Descriptive statistics was conducted to measure consumption; also were done comparisons between age groups and gender with Mann-Whitney U-test and Student t-test.

20.2%
Of the total daily energy intake

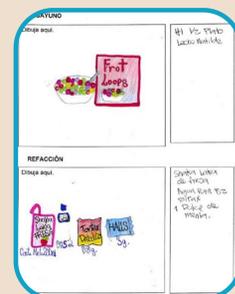
The mean contribution of sweetened drinks was 428±237 kcal. There were no significant differences in the pattern of drinks consumption between boys and girls.



The most common beverage packaging was plastic bottles and Tetra Pak® cartons.



The unit price by retail presentation ranged from Q.0.40 to 21.00. (\$0.05 to 2.76 USD).



RESULTS

Beverage consumption pattern among elementary schoolchildren attending public schools in Amatitlán, Guatemala with daily average of 1628 mL using two classification systems

Figure 1
Milliliters consumed by beverages classification

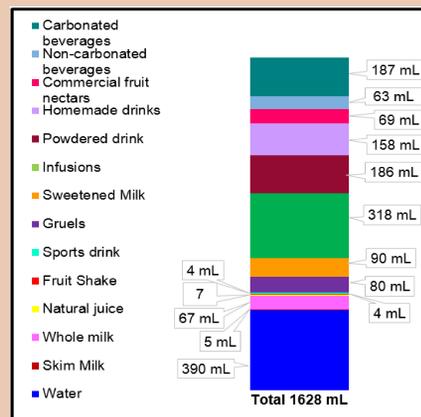
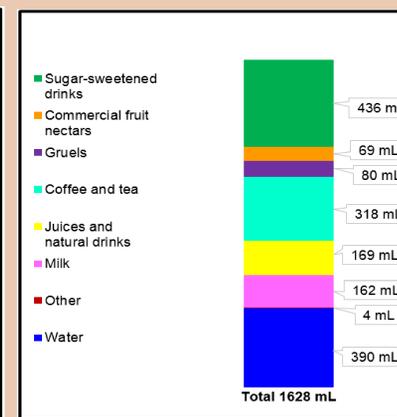


Figure 2
Milliliters consumed by Rivera et al, 2008 beverages classification



Beverage consumption pattern among elementary schoolchildren attending public schools in Amatitlán, Guatemala with daily average of 479 kcal using two classification systems

Figure 3
Calories consumed by beverages classification

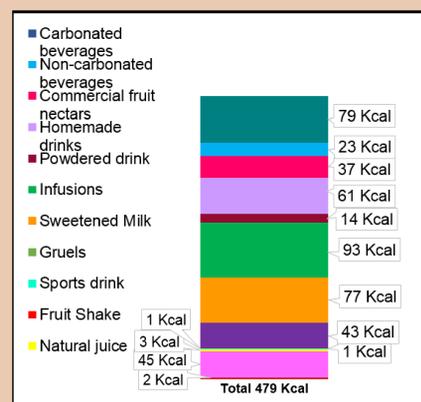
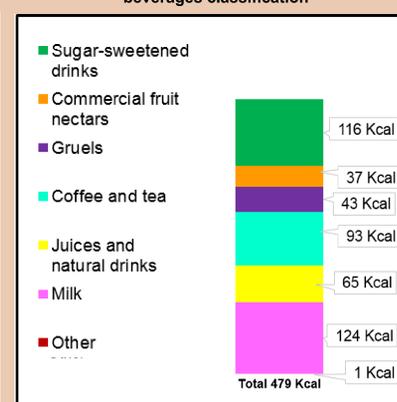


Figure 4
Calories consumed by Rivera et al, 2008 beverages classification



DISCUSSION/CONCLUSION

Pictorial recording of diet is a promising approach for child nutrition. Industrialization has changed the pricing and availability of different sugar-sweetened drinks, thus further contributing to the nutritional transition. However, carbonated soda beverages were not the major sweetened drink in this simple of Guatemalan schoolchildren; the main contributor was from infusions (sweetened coffee and tea). Overall, the calories from all sugar-containing drinks combined constitute about one-fifth of the reported energy for the single-day's intake, This is similar to the experience reported in Mexico⁵, US⁶ and Great Britain⁷.

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Contact Information:

Liza Alejandra Díaz Jereda
Guatemala City, Guatemala
liz.diaz18@gmail.com