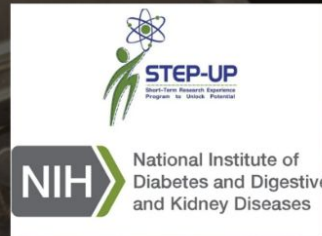


FACTORS ASSOCIATED WITH SODA CONSUMPTION AMONG HIGH SCHOOL STUDENTS IN AMERICAN SAMOA

Presented by: Lisi Mauigoa

Mentor: Alina Giapis

Coordinating Mentor: Hawaii UH Manoa



Introduction & Study Objectives

- Why **soda**? → primary source of added sugar in adolescent diets
- **Health risks**: linked to obesity, type 2 diabetes, and cardiovascular disease
- Why **adolescents/adolescence**? → it's a critical window for habit formation and early disease prevention

Objective: Identify groups at greater risk for frequent soda intake by examining key factors

- Gender
- Subjective household income rank
- Grade level & high school attended

RESEARCH GOAL: To provide evidence which could support targeted school wellness policies and healthy beverage programs in American Samoa.

Research Question & Hypotheses

Q: What factors are associated with soda consumption among high school students in American Samoa?

H1 (Gender): Male students will report a higher monthly frequency of soda consumption than female students.

H2 (Socioeconomic/Household income rank): Lower perceived household income rank as compared to one's peers will be associated with a higher monthly frequency of soda consumption.

H3 (Grade Level): Upperclassmen (11th & 12th grade students) will consume soda more frequently than lowerclassmen (9th & 10th grade students).

Methods

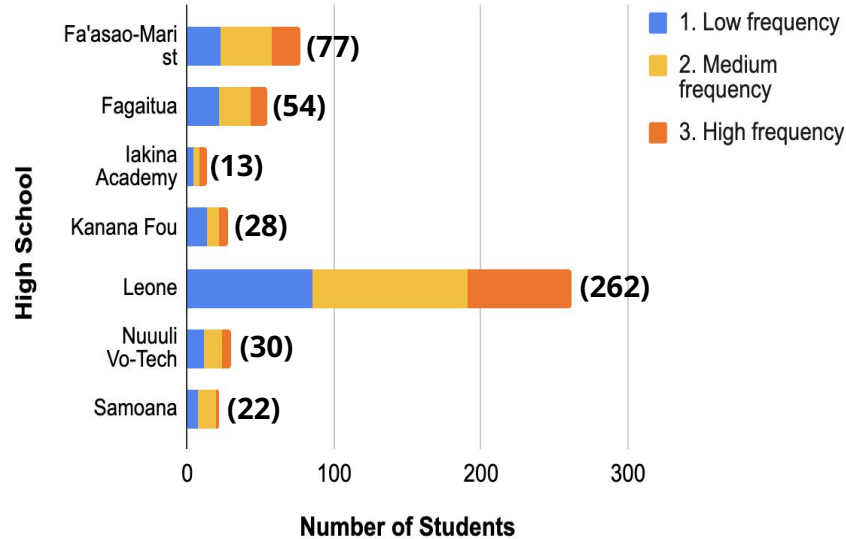
- **Sample:** 486 students (ages 11–19) from 7 high schools across the island
- **Data:** secondary analysis of an existing survey of adolescent metabolic health, including a detailed dietary health questionnaire (DHQ) conducted in 2025 by Dr. Mata'uitafa Faiai, PhD (Yale School of Public Health)
- **Analysis:** descriptive statistics, pivot tables, and correlation coefficients

Data Grouping:

- **How we organized soda consumption tiers:** we grouped options into **low frequency** ("Never" to "2-3 times last month"), **medium frequency** ("1 time per week" to "5-6 times per week"), and **high frequency** ("1 time per day" to "6 or more times per day")
- **How we organized income rank groups:** we grouped ranking values from 0-10 for "where would you place your household compared to others in American Samoa" into Lower income status (0-4), Similar income status (5), and Higher income status (6-10).

Results: Understanding the #s and %s

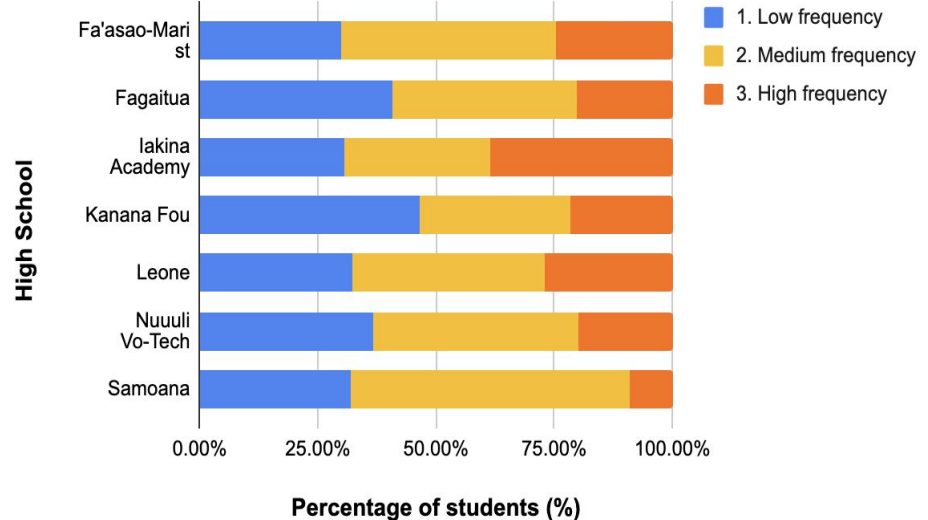
Soda Consumption frequency by High School Counts



HISTOGRAM

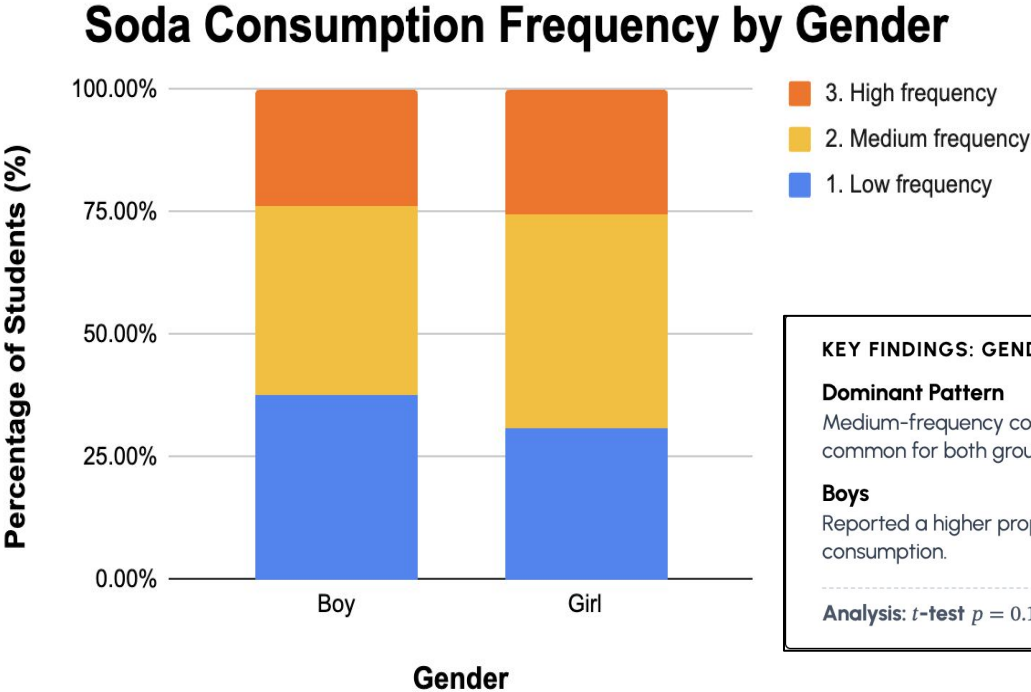
vs.

Soda consumption patterns by High School (%)



100% STACKED BAR CHART

Results: (H1 - Gender)



COUNTA of final_soda_frequency	
gender_name	Grand Total
Boy	232
Girl	254
Grand Total	486

KEY FINDINGS: GENDER ANALYSIS

Dominant Pattern

Medium-frequency consumption was most common for both groups.

Boys

Reported a higher proportion of low-frequency consumption.

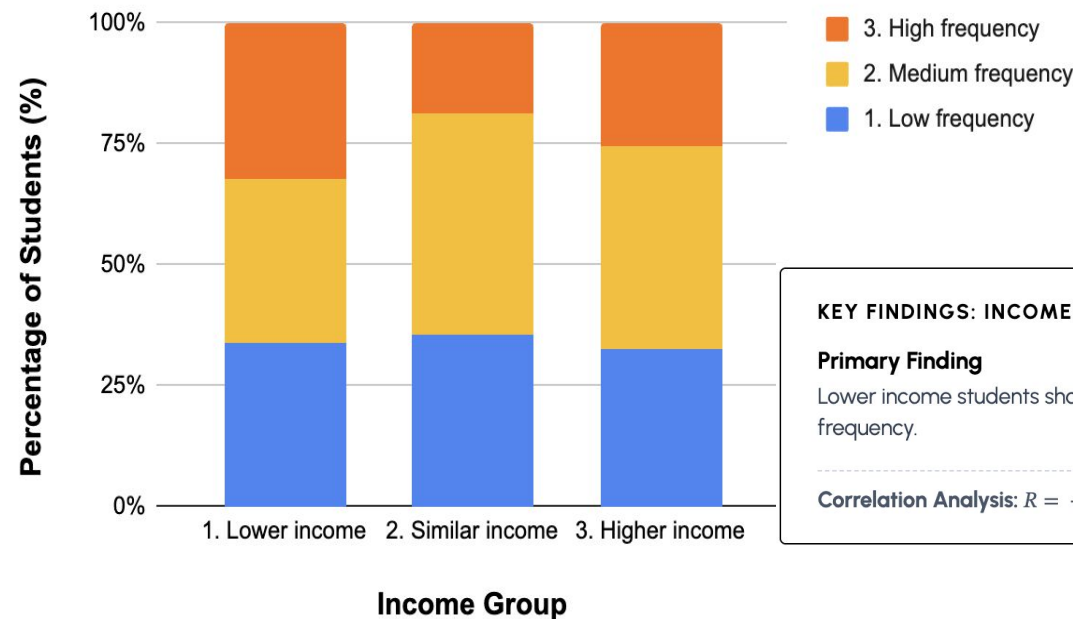
Girls

Slightly higher medium- and high-frequency consumption.

Analysis: *t*-test *p* = 0.175 (Not statistically significant)

Results: (H2 - Socioeconomic/Income Rank)

Soda Consumption Frequency by Income Rank



COUNTA of final_soda_frequency	
income_group	Grand Total
1. Lower income	103
2. Similar income	151
3. Higher income	232
Grand Total	486

KEY FINDINGS: INCOME RANK

Primary Finding

Lower income students showed the highest peak frequency.

Linear Trend

The overall linear relationship is very weak across tiers.

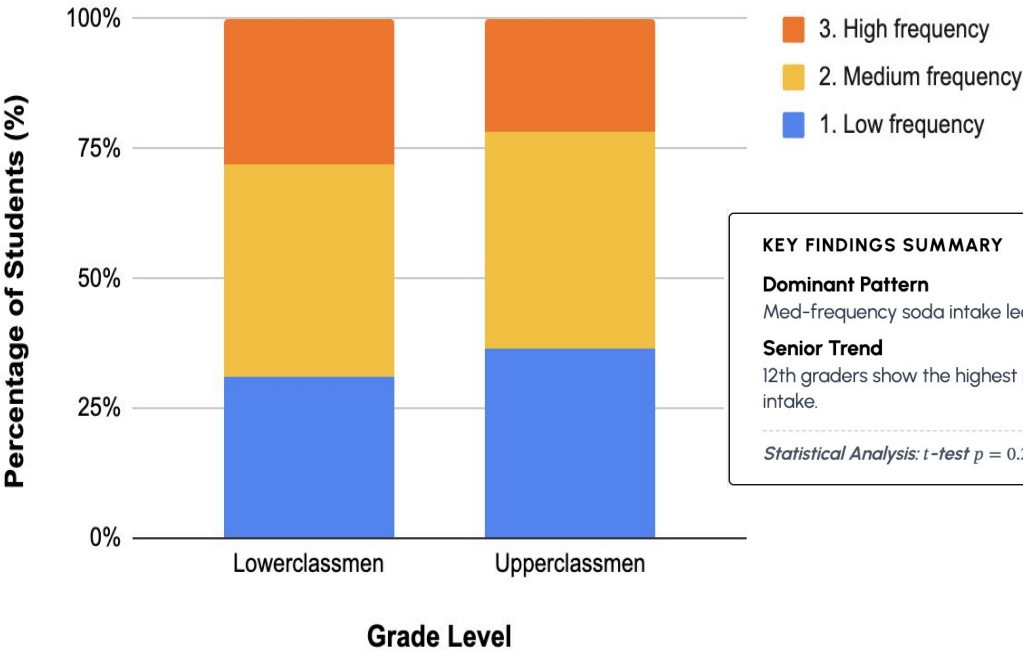
Correlation Analysis: $R = -0.061$

Results (Grade Level)

COUNTA of final_soda_frequency	
upper_lower	Grand Total
Lowerclassmen	231
Upperclassmen	255
Grand Total	486

COUNTA of final_soda_frequency	
grade_name	Grand Total
09th Grade	123
10th Grade	84
11th Grade	99
12th Grade	156
Grand Total	486

Soda Consumption Frequency by Grade (%)



KEY FINDINGS SUMMARY

Dominant Pattern

Med-frequency soda intake leads across Grades 9–11.

Senior Trend

12th graders show the highest rate of low-frequency intake.

High Intake Trend

Consumption slightly drops as grade levels increase.

Statistical Insight

Differences between groups are not statistically significant.

Statistical Analysis: $t\text{-test } p = 0.2369$ / $R = -0.0976$

Conclusions & Limitations

Conclusions	Limitations
• Medium-frequency soda consumption was the most common pattern among all students. • Our findings <i>partially</i> supported our study hypotheses, but relationships were weak. • Lower-income students showed a higher proportion of high-frequency soda consumption than higher-income students. • Girls reported slightly greater high-frequency soda consumption than boys. • Upperclassmen (specifically 12th graders) had the lowest proportion of high-frequency soda consumers. • Overall, soda consumption was common across all student groups, reflecting broader territory trends where 24.6% of American Samoa youth consume daily soda compared to 14.7% on U.S mainland.	• Secondary analysis of an existing dataset; other variables & other parts of the picture missing • Tafuna High School (one of the biggest public schools on island) was <i>not</i> included • BMI and HbA1c measurements were excluded because only a small number of students had complete measurements; could offer insights • Study questionnaire did not include energy drinks and other locally relevant, high calorie options • Stronger relationships might have been revealed had we not grouped the data into tiers • Hidden causes could be at play; these patterns could still be real and meaningful

Future Directions

- Investigate environmental/sociocultural factors associated with soda consumption
 - Examine the availability and proximity of SSB sources near individual high schools
 - Consider how gender and grade level school activities influence soda access
- Assess how internal school environments influence students' beverage choices (i.e., what options are provided during school lunch programs, fundraisers, events, etc.)
- Conduct further analysis and include biological markers of health, such as BMI and HbA1c
- Redistribute this DHQ/metabolic health survey to **more** students at each of the island's major high schools, particularly at schools which were not (well) represented by this dataset
- Support the development of targeted dietary interventions and school wellness policies addressing adolescent health in American Samoa → senior year project!

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Thank You
For Your Attention!

Any Questions

