



Variables that Influence Water Consumption Practices in New York City

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Background/Aims

- Early childhood caries (ECC) remains one of the most prevalent chronic diseases affecting children worldwide, and preventive measures such as community water fluoridation (CWF) are well established in reducing caries prevalence.
- Despite widespread access to fluoridated water in urban settings like New York City, many families rely on bottled water.
- Previous research suggests that water consumption behaviors are influenced not only by access, but also by socioeconomic status, cultural beliefs, and caregiver knowledge.
- Current political skepticism about CWF has resulted in widely publicized banning of it in some states, starting with Utah in March 2025. These current controversies may also influence parental choices for water consumption for their families.

Aims:

- **To evaluate parental perceptions, beliefs, and knowledge that influence water consumption choices,**
- **To assess children’s exposure to fluoridated water, and**
- **Explore associations of water consumption with ECC in a diverse urban population.**

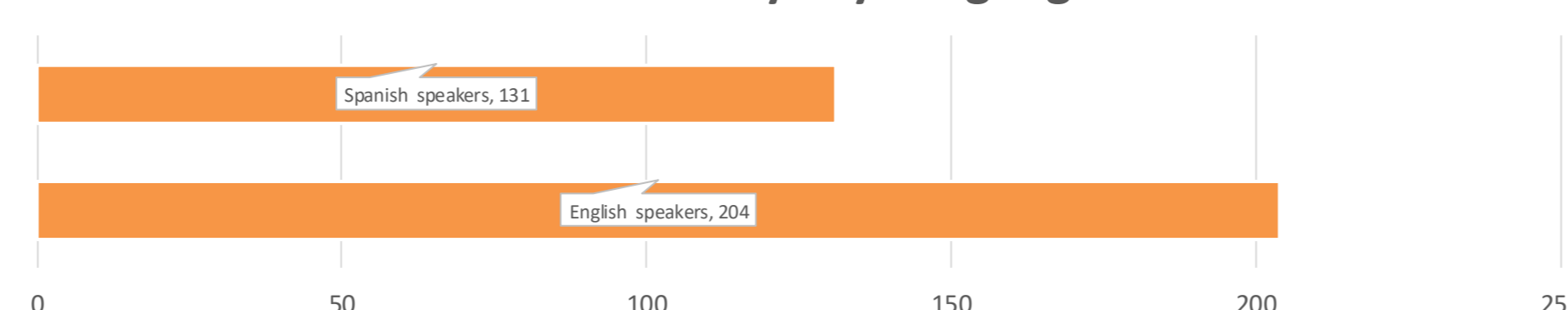
Methods

This prospective cross-sectional study was conducted at the NYU Dentistry’s Pediatric Clinic with IRB-FY 2025-9791. Participants included parents or legal guardians of pediatric patients who agreed to complete a questionnaire in English or Spanish in the clinic’s waiting area. Data was collected through in-person, structured interviews conducted by trained research assistants. The questionnaire assessed household water use, child water consumption patterns, fluoride knowledge, cultural background, socioeconomic indicators, and caries experience. Participants were recruited between March and October 2025. Descriptive statistics were used to summarize the data, and associations between variables were evaluated using chi-square and Fisher’s exact tests, with multivariable logistic regression performed to assess predictors of tap water consumption. Statistical significance was set at $p < 0.05$.

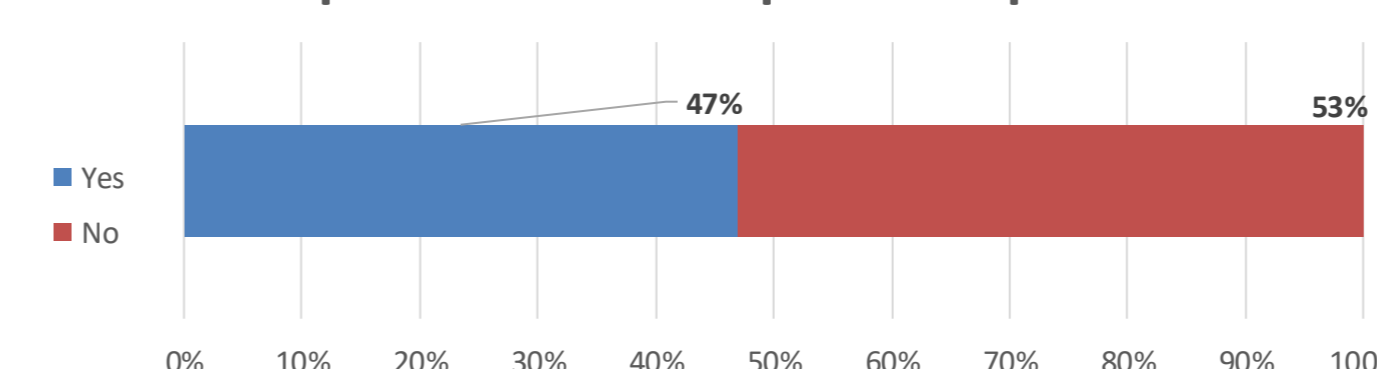
Results

- 335 parents participated in the study, with 204 completing the survey in English and 131 in Spanish.
 - 58% identified as Hispanic from multiple regions of Latin America.
 - 78% of parents reported that their child had experienced decay, often before the age of six.
 - 47% of children drank tap water at home, while 53% did not.
 - Reasons for water choice were safety or health concerns (70%), followed by taste (19%) and other factors like brown color in the water and convenience. (22%).
 - **Among Spanish-speaking families, children were significantly more likely to drink tap water if their parents had grown up drinking tap water themselves ($p < 0.01$).**
 - **No significant associations were found between parental education, ethnicity, or child caries experience and tap water consumption.** Daily water intake varied, with
 - 53% of children consumed four or more glasses per day.
- Although most children did not drink tap water, 90% of families reported using tap water for cooking, often preparing multiple meals at home. Awareness of community water fluoridation was low, with **47% of parents unaware that NYC tap water is fluoridated**. Encouragingly, **76% of parents indicated a willingness to change their water consumption habits if it would improve their child’s oral health**.

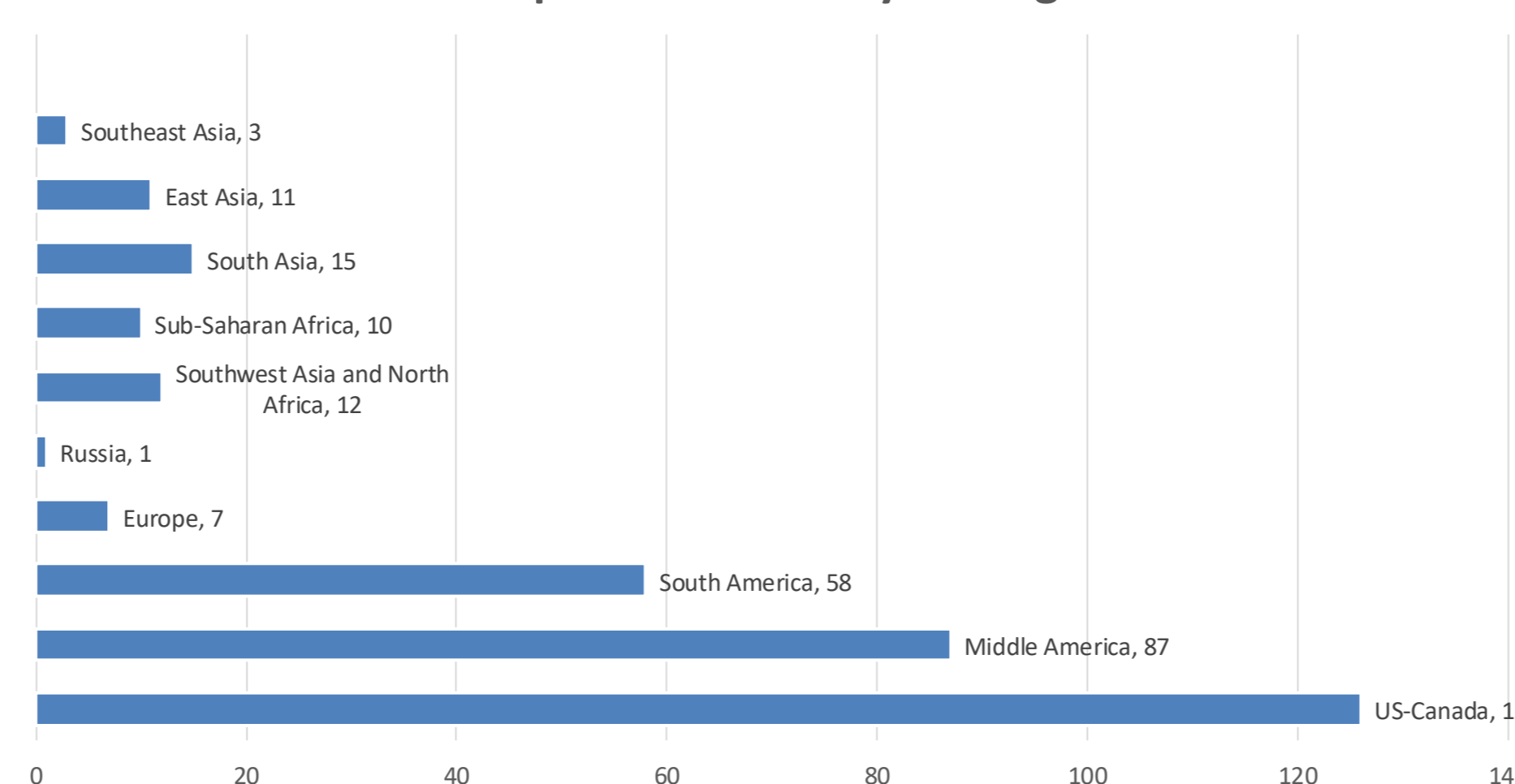
Total Surveys by Language



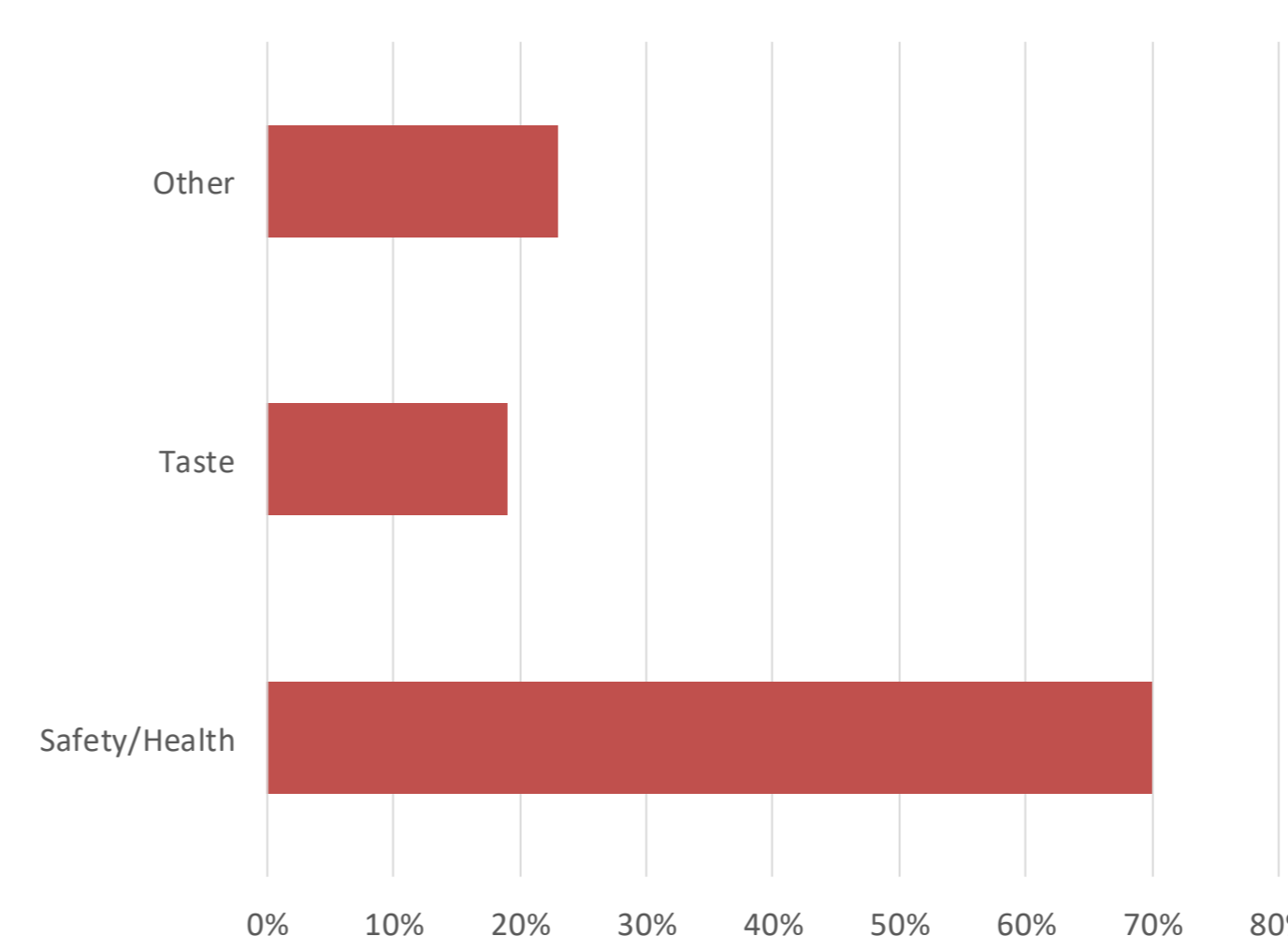
Tap Water Consumption Responses



Respondent Country of Origin



Reasons for Water Choice



Discussion

- Despite NYC water being promoted as clean and safe, CWF tap water consumption among children remains suboptimal.
- Cultural influences, particularly parental upbringing, appear to play a significant role in shaping water consumption behaviors, especially among Spanish-speaking families.
- Safety concerns, misconceptions and knowledge about tap water persist, even in a highly regulated urban water system.
- The lack of association between water consumption and education level suggests that knowledge gaps are widespread and not limited to specific demographic groups.
- With almost half of the parents being unaware of CWF in their area, the likelihood of media anti-fluoridation sentiments impacting parental choices is reduced.
- The high prevalence of tap water use for cooking raises important questions about indirect fluoride exposure and its potential protective effects, which warrant further investigation.

Conclusions

1. This study highlights the underutilization of fluoridated tap water among families in New York City and identifies cultural beliefs and safety concerns as key barriers.
2. Increasing awareness of the benefits and safety of community water fluoridation is essential for improving preventive oral health behaviors.
3. Pediatric dental providers are well positioned to deliver targeted education and counseling to address misconceptions and promote healthier practices.
4. Future research should explore the role of indirect fluoride exposure through cooking and develop effective interventions to increase tap water consumption in diverse populations.