Fás Aníos in Éirinn
Growing Up in Ireland

Rialtas na hÉireann
Government of Ireland

# *Oral Health Behaviours between Childhood and Adulthood: Findings from a Nationally Representative Longitudinal Study in Ireland*

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# Background

- A healthy mouth, a healthy you
- Oral health behaviours
- Transition period: Parental control to self-management
- Adolescence: Independence, autonomy & adult behaviours


# Objectives

- Describe changes in oral health behaviours (daily toothbrushing frequency, dentist visit behaviour and consumption of sugary foods and drinks) across the first four waves of the GUI child cohort survey.

- Investigate the relationship between age and oral health behaviours in Irish children

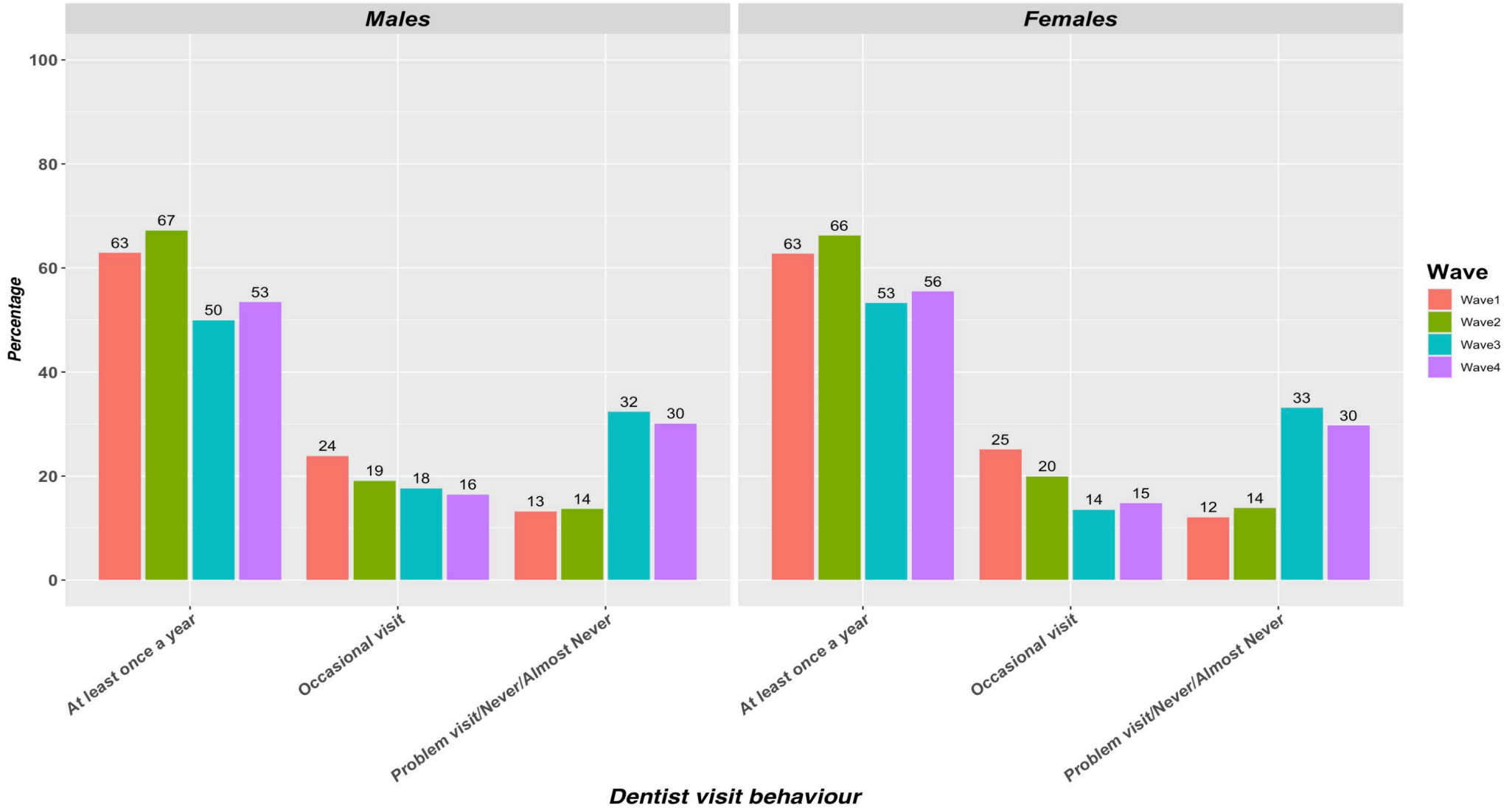
# Methodology

- GUI Child Cohort survey, Waves 1, 2, 3 and 4 (N = 4,729).
- Outcome variables: Oral health behaviours
  - Toothbrushing frequency (Waves 2 and 3)
  - Dentist visit behaviour, Consumption of sugary foods & drinks (Waves 1, 2, 3 and 4)
- Explanatory variable: Age
- Covariates (Wave 1: Gender, PCG's educational level, family occupational class and medical card status)
- Random effects logistic regression models
- Statistical software: R studio

# Results: Exploratory Analysis

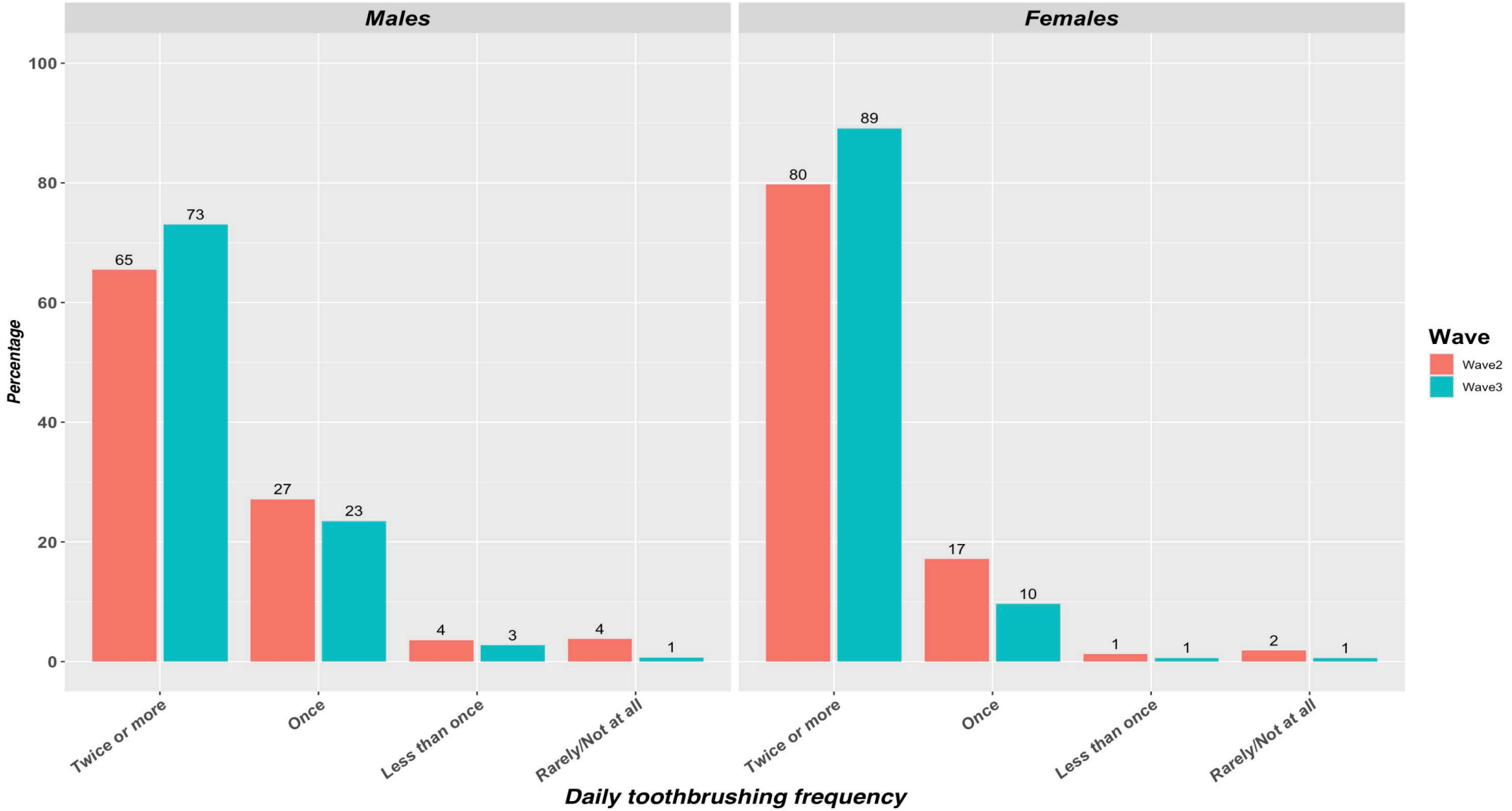
*Wave 1: 9 Years*
*Wave 2: 13 Years*
*Wave 3: 17/18 Years*
*Wave 4: 20 Years*

## *Dentist Visit Pattern by Gender and Wave*



*Wave 1: 9 Years*
*Wave 2: 13 Years*
*Wave 3: 17/18 Years*
*Wave 4: 20 Years*

# *Daily Toothbrushing Frequency by Gender and Wave*



*Wave 1: 9 Years*
*Wave 2: 13 Years*
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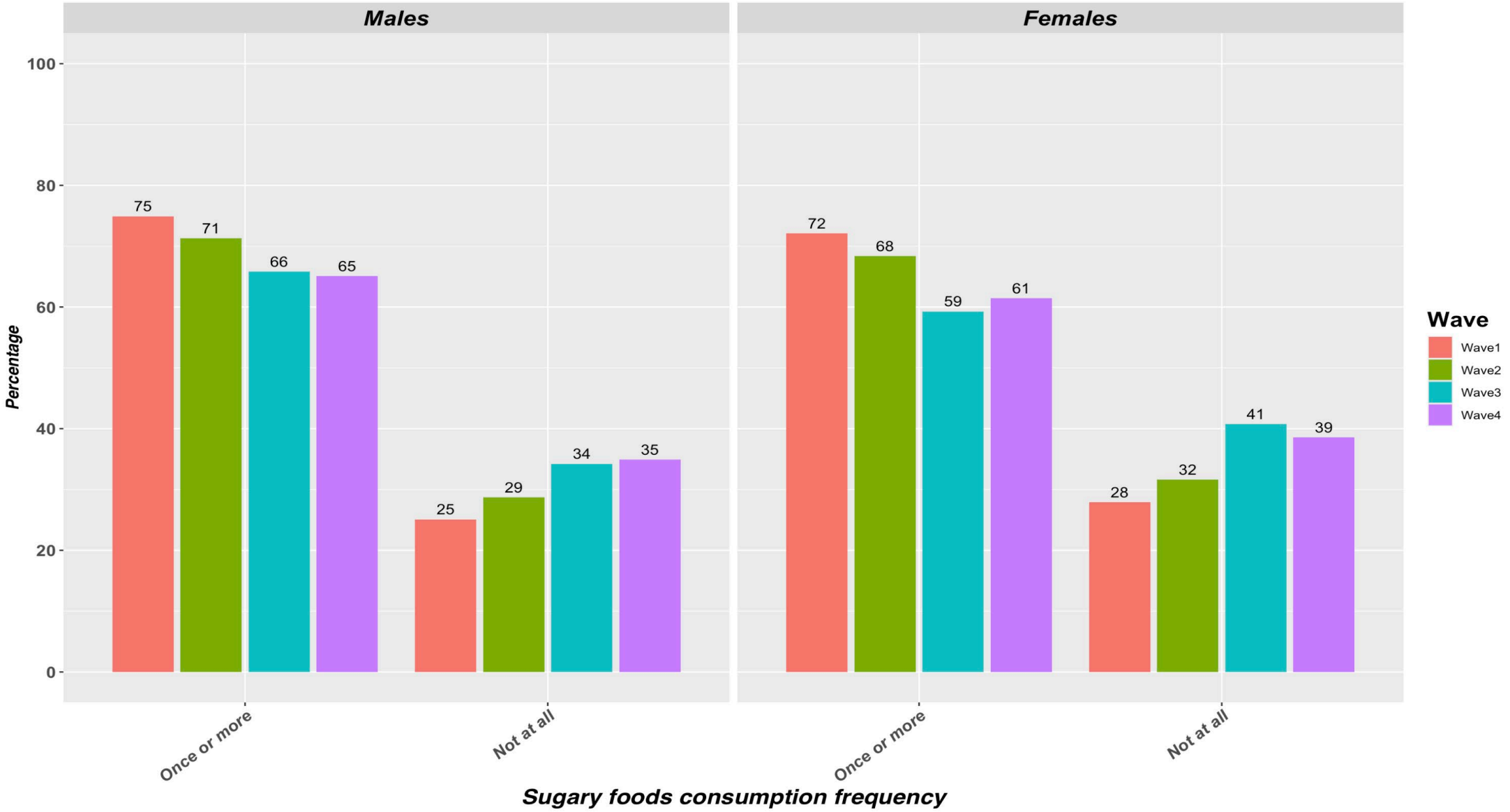
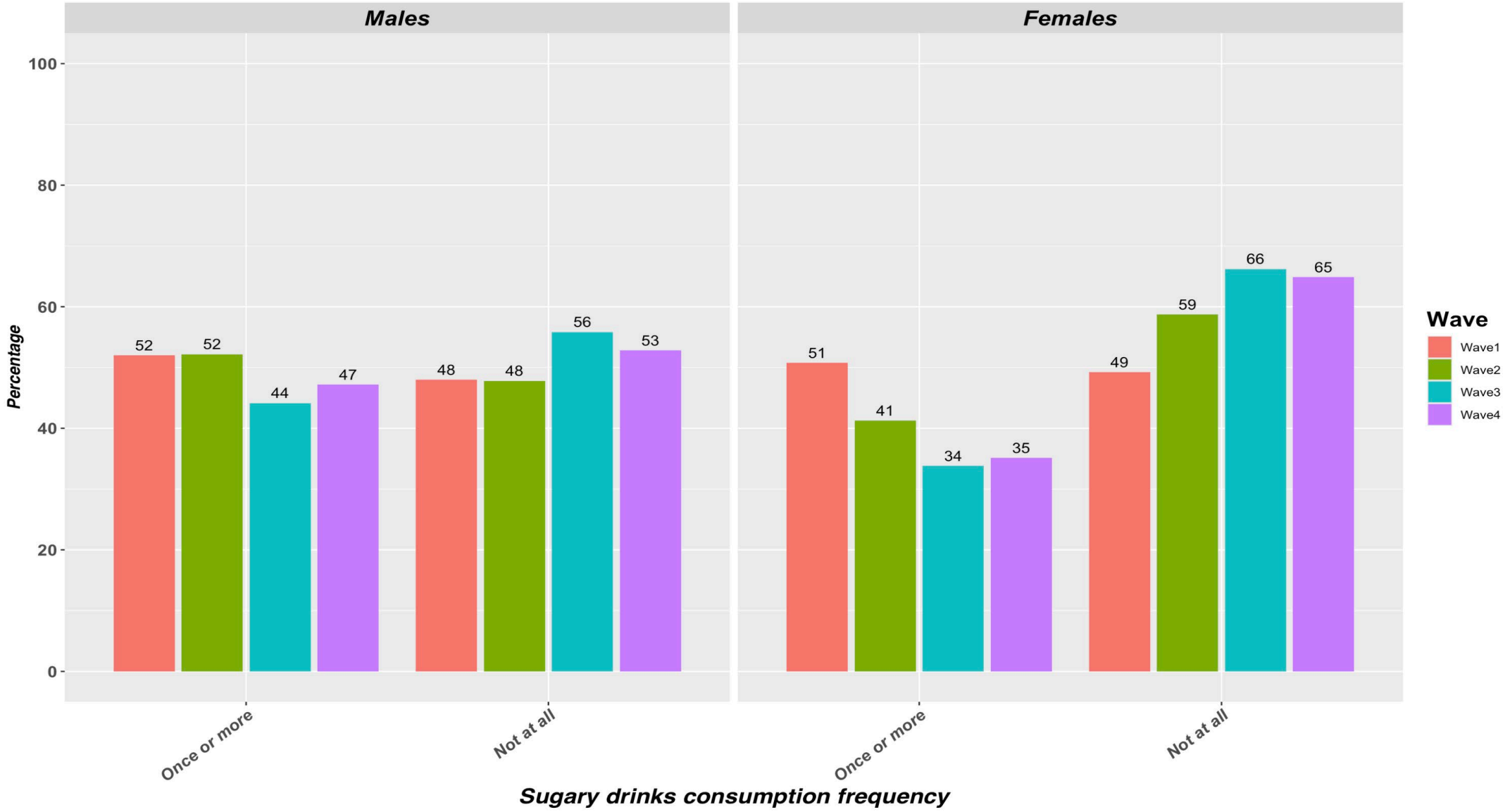
*Wave 4: 20 Years*

# *Sugary Foods Consumption by Gender and Wave*



*Wave 1: 9 Years*
*Wave 2: 13 Years*
*Wave 3: 17/18 Years*
*Wave 4: 20 Years*

# *Sugary Drinks Consumption by Gender and Wave*



# Results: Explanatory Analysis

| Outcome | Age<br>OR (95% CI) | Gender (Female vs Males)<br>OR (95% CI) | Educational level (Tertiary vs Primary)<br>OR (95% CI) | Family Occupation (Professional/managers vs Semi/Unskilled)<br>OR (95% CI) | Medical card status (Not covered vs Full card)<br>OR (95% CI) |
|---|---|---|---|---|---|
| **Dentist visit behaviour: At least once a year** | **0.89 (0.822-0.963)** | 1.049 (0.977-1.127) | **1.351 (1.108-1.646)** | 1.127 (0.998-1.274) | **1.232 (1.123-1.352)** |
| **Daily toothbrushing frequency: Twice or more a day** | 1.00 (0.763-1.29) | **3.556 (2.967-4.263)** | **2.192 (1.389-3.458)** | **1.398 (1.05-1.861)** | **1.969 (1.588-2.442)** |
| **Sugary foods consumption: Once or more a day** | **0.883 (0.811-0.962)** | **0.915 (0.84-0.996)** | 1.015 (0.801-1.286) | 0.974 (0.841-1.129) | **1.207 (1.079-1.349)** |
| **Sugary drinks consumption: Once or more a day** | **0.791 (0.725-0.862)** | **0.628 (0.576-0.685)** | **0.365 (0.286-0.466)** | **0.622 (0.536-0.721)** | **0.758 (0.677-0.848)** |

# International Comparisons

| Study | Dentist visit behaviour: At least once a year | Daily toothbrushing frequency: Twice or more a day | Sugary foods consumption: Once or more a day | Sugary drinks consumption: Once or more a day |
|---|---|---|---|---|
| Ireland (Present study) | ↓ | | ↓ | ↓ |
| United Kingdom (Leary and Do, 2019) | Complete sample ↓ | Males ↓ Females ↑ | | Complete sample ↑ |
| Germany (Krause *et al.*, 2018) | Complete sample ↓ | Complete sample ↓ | | |
| Finland (Raittio, Helakorpi and Suominen, 2021) | | Complete sample ↑ | | |
| France (Fernandez de Grado *et al.*, 2021) | | Males Females ↑ | | |

# Strengths and Limitations

- 😊 Nationally representative sample
- 😊 Availability of longitudinal data
- 😔 Questionnaire variations
- 😱 Dichotomisation of variables
- 🤷‍♂️ Other explanatory factors
- 🤦‍♂️ Recall, reporting and social desirability bias

# Recommendations

- Investigate the possible interaction between SES and health behaviours
- Explore the role of structural and commercial determinants
- Undertake data harmonisation and pooled analysis
- Undertake data linkage and spatial analysis

# Conclusions and Policy Implications

- Oral health behaviours showed divergent age-related patterns
- Self-care behaviours remained unchanged, dietary behaviours improved, and preventive care utilisation declined
- Gender and social differences in oral health behaviours
- Interventions should be planned with consideration of individuals' age, gender, and social position

# References


- Williams, J., Greene, S., Doyle, E., Harris, E., Layte, R., McCoy, S., McCrory, C, Murray, A., Nixon, E., O'Dowd, T., O'Moore, M., Quail, A., Smyth, E., Swords, L. & Thornton, M. (2009). Growing Up in Ireland: The lives of 9-year-olds (Child Cohort Research Report No. 1). Dublin: The Stationery Office.
- Leary SD, Do LG. Changes in oral health behaviours between childhood and adolescence: Findings from a UK cohort study. *Community Dentistry and Oral Epidemiology*. 2019;47(5):367-373. doi:https://doi.org/10.1111/cdoe.12475
- Krause, L., Kuntz, B., Schenk, L. and Knopf, H. (2018) 'Oral health behaviour of children and adolescents in Germany. Results of the cross-sectional KiGGS Wave 2 study and trends', *J Health Monit,* 3(4), pp. 3-19.
- Raittio, E., Helakorpi, S. and Suominen, A. L. (2021) 'Age-Period-Cohort Analysis of Toothbrushing Frequency in Finnish Adults: Results From Annual National Cross-Sectional Surveys From 1978 to 2014', *Int Dent J,* 71(3), pp. 233-241.
- Fernandez de Grado, G., Ehlinger, V., Godeau, E., Arnaud, C., Nabet, C., Benkirane-Jessel, N., Musset, A. M. and Offner, D. (2021) 'Changes in tooth brushing frequency and its associated factors from 2006 to 2014 among French adolescents: Results from three repeated cross sectional HBSC studies', *PLoS One,* 16(3), pp. e0249129.

# Thank you……

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