



Changes in oral health related behaviours from early to middle childhood : findings from the national longitudinal survey of children in Ireland.

V. Sharma ^{*1}, M. O'Sullivan ¹, O. Casseti ¹ A. O' Sullivan ² and M. Crowe ¹
¹*Dublin Dental University Hospital, Trinity College Dublin,*
²*Institute of Food and Health, University College Dublin*

12th Annual
Research
Conference
2020

Oral Health



WHO defines Oral Health:

“A state of being free from mouth & facial pain, oral diseases and disorders that limit an individual’s capacity in biting, chewing, smiling, speaking & psychosocial well-being”.

Background

- Children with primary teeth caries ~ **530 million** (GBD Collaborators, 2018)
- **20% to 90%** of 6-year-olds in Europe affected by dental caries (WHO, 2020)
- Public health issue
- Dental caries and obesity



Oral Health in Ireland and International Comparisons

Oral health in Ireland

Dental decay in 5-year-olds

● Decay ● Decay free



Oral health in Ireland

Dental decay in 12-year-olds

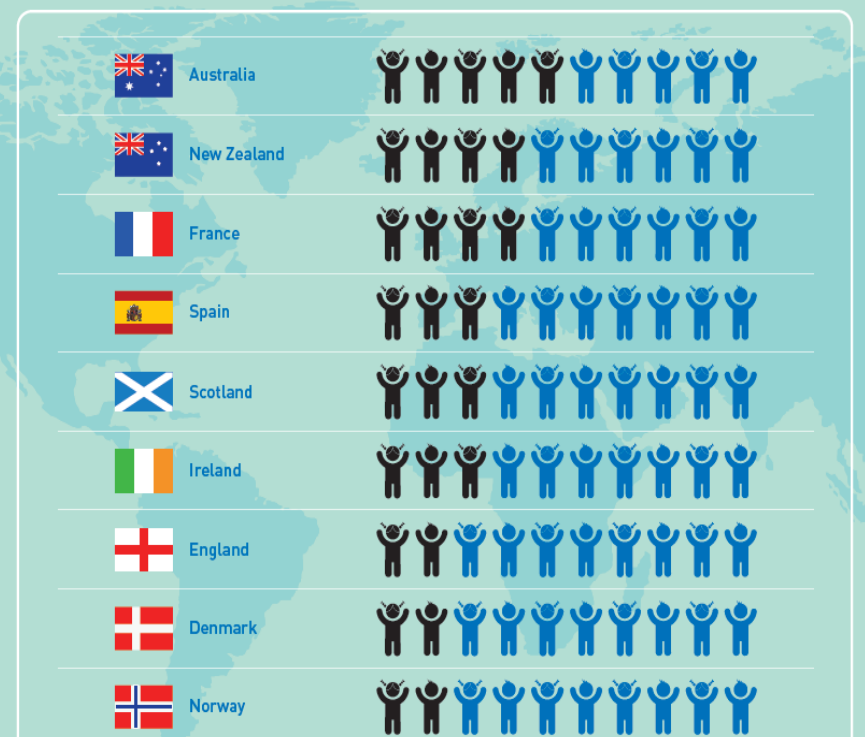
● Decay ● Decay free



International comparisons

5/6-year-olds – Proportion with dental decay

● Decay ● Decay free



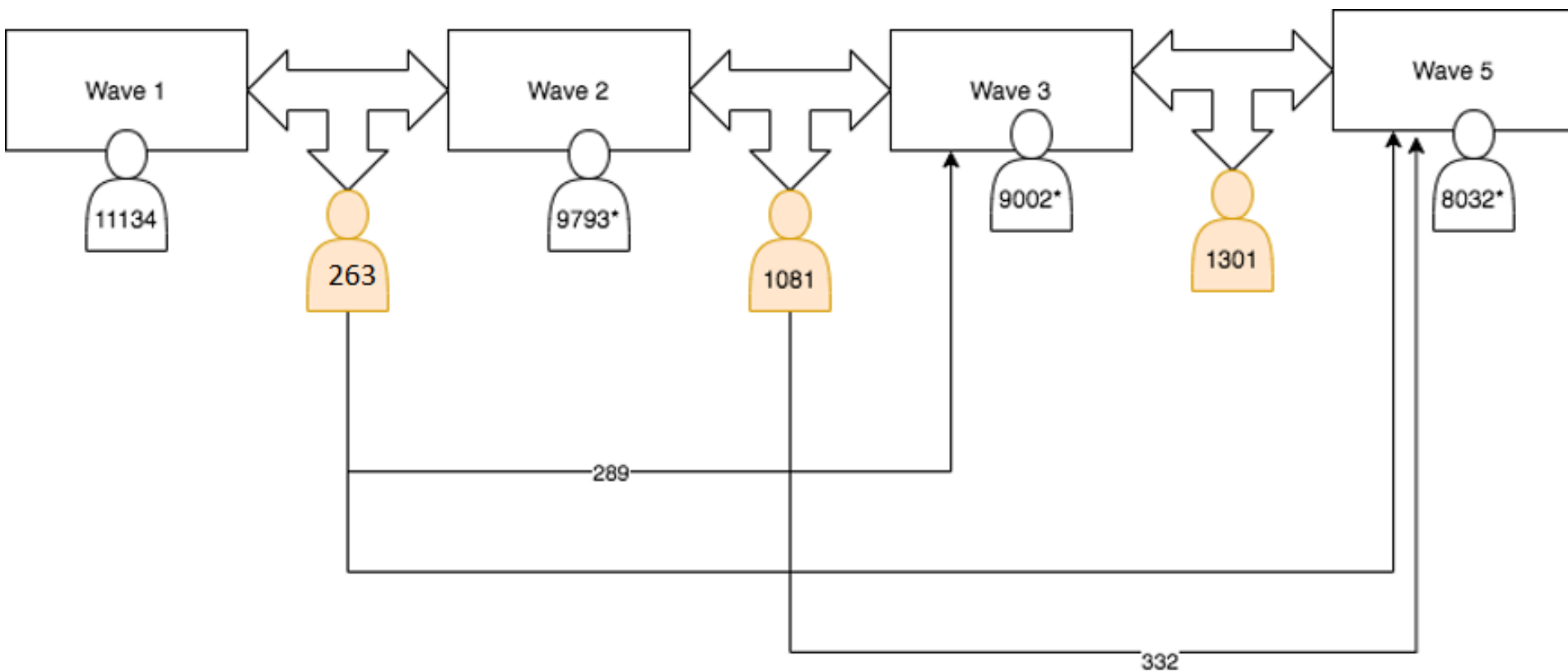
(Department of Health Ireland, 2019)

Objectives

- Describe oral health related behaviours for 3 waves of GUI infant cohort.
- Explore changes in dietary intake of cariogenic food and drinks
- Compare patterns of behaviour by gender



GUI Infant Cohort Waves



Descriptive Analysis

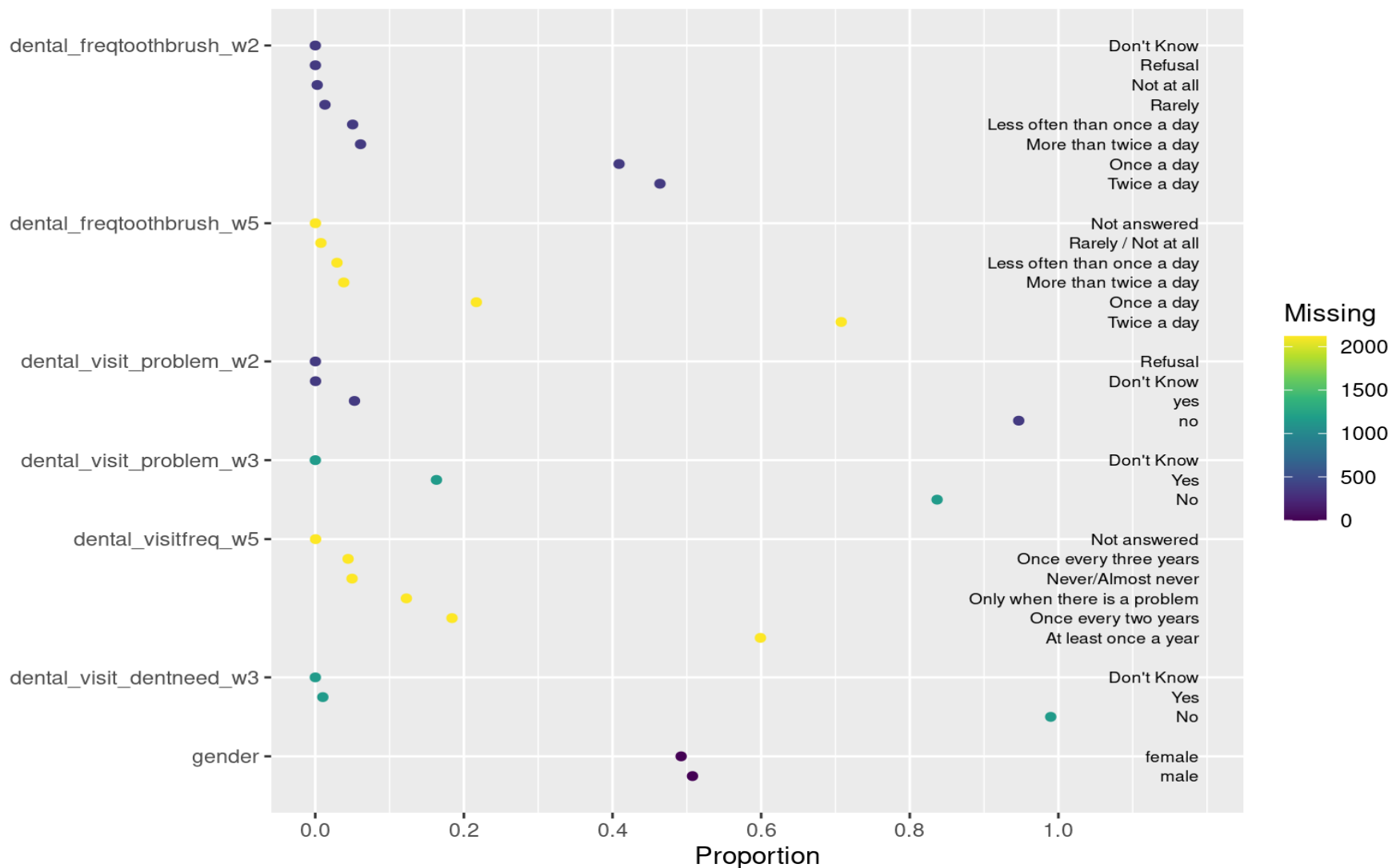
- **Data Manipulation**

- I. Variable renaming convention- mapping file.csv
- II. Question labels and input levels- corrections
- III. Handling missing data
- IV. Files merged to a .RDS file

- **Variables**

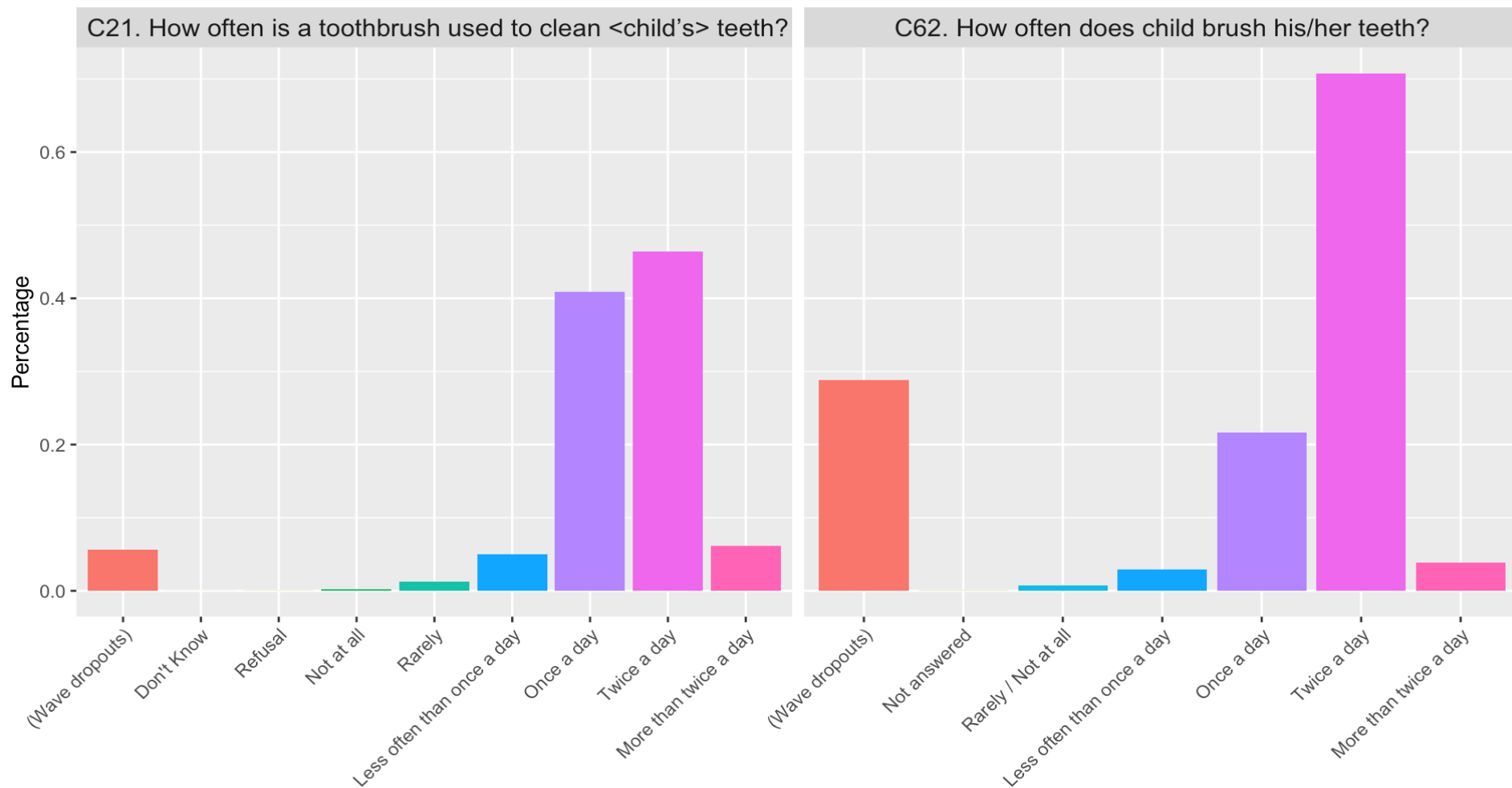
- I. Dental variables- dental problem visit, toothbrushing, extractions, fillings etc.
- II. Cariogenic food variables - FFQ v 24-Hour recall
- III. Gender

Dental Variables Summary



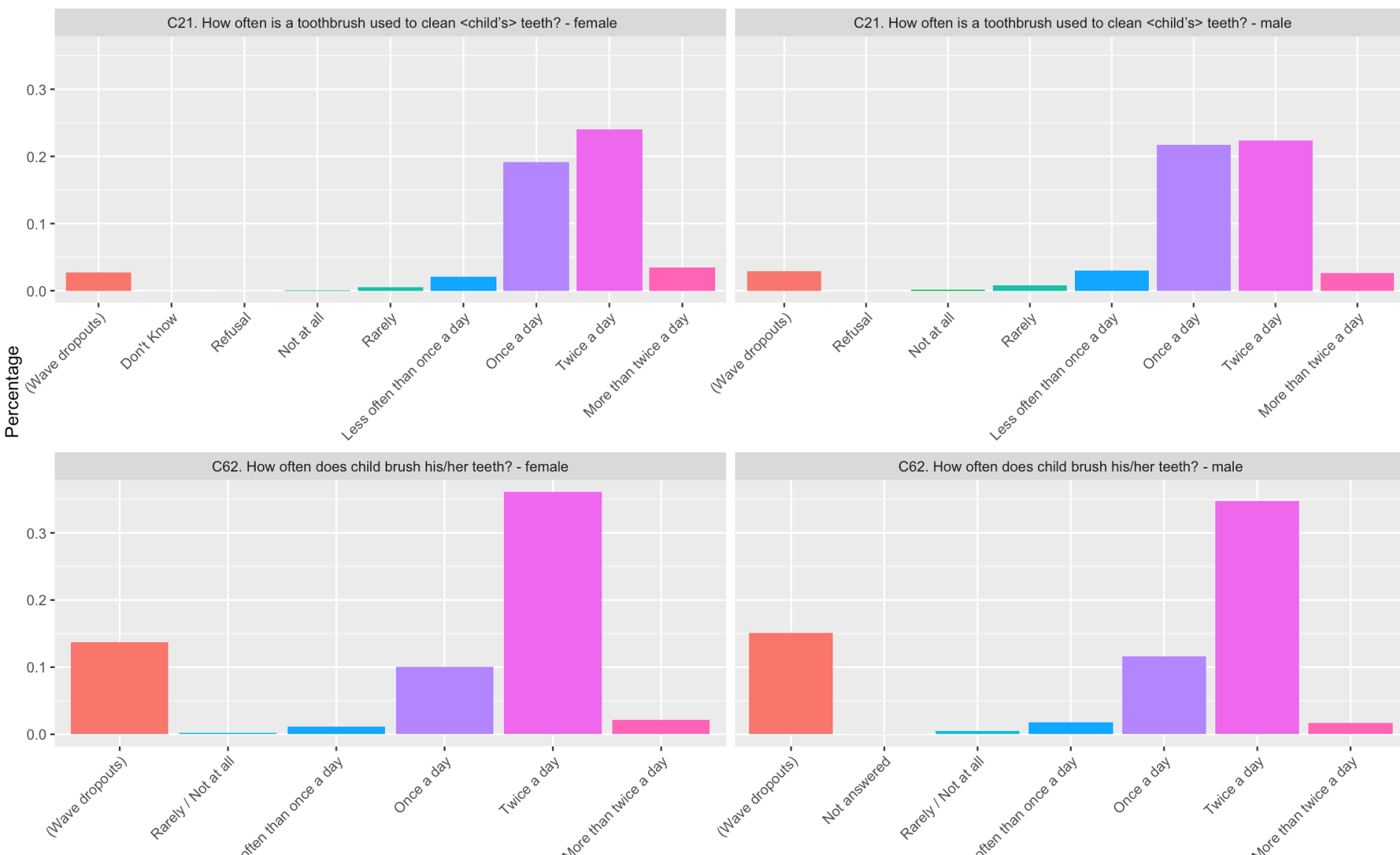
Toothbrushing Frequency at 3 and 9 Years of Age

Toothbrushing frequency at 3 years (w2) and 9 years of age (w5)



Toothbrushing Frequency at 3 and 9 Years of Age by Gender

Tooth brushing frequency



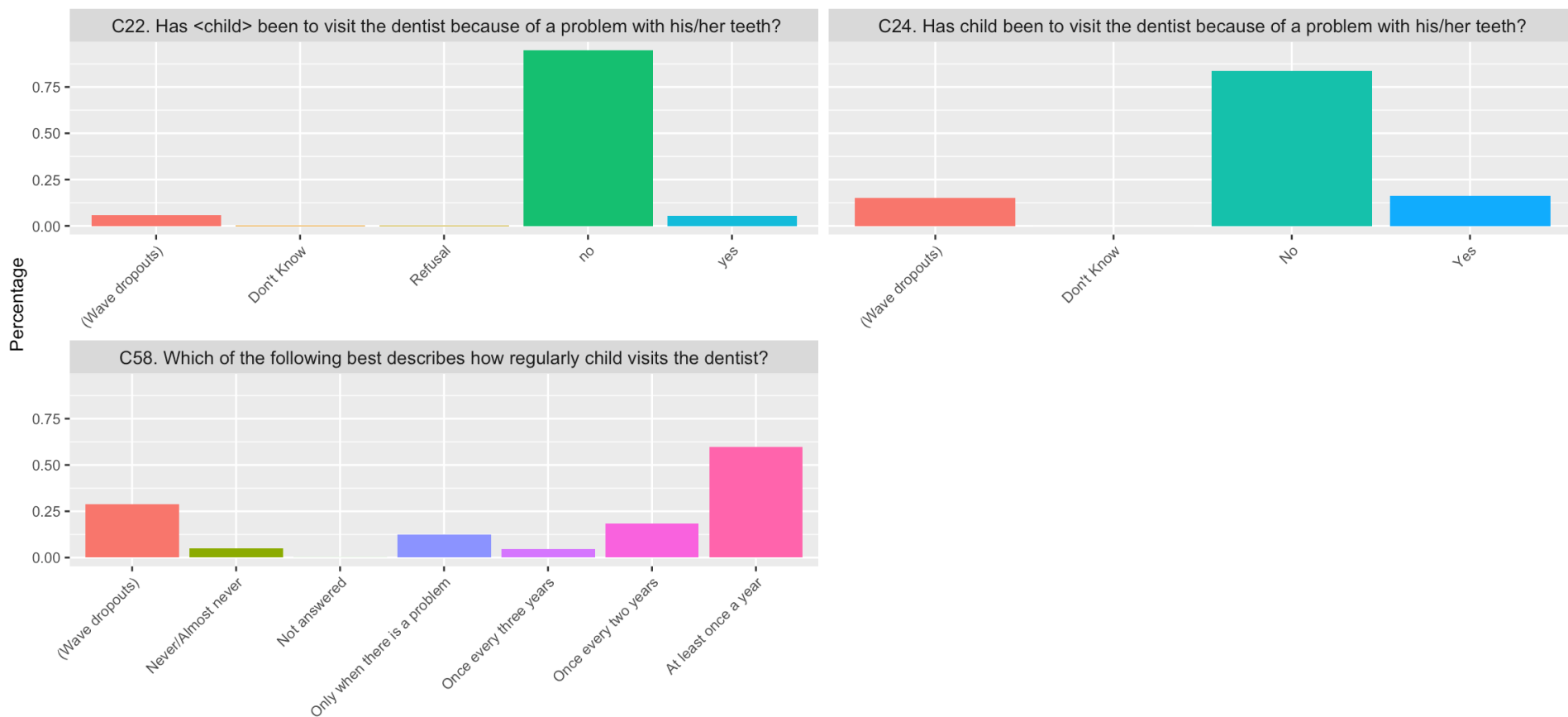
Comparison with Other Studies

Toothbrushing frequency	GUI Child Cohort (9years)		ALSPAC (UK) (10.5 years)		HBSC(10-11years)	
	Boys(%)	Girls(%)	Boys(%)	Girls(%)	Boys(%)	Girls(%)
Twice/more than once a day			73.5	77.6	64-66	68-82
Once a day	95	96.2				

HBSC IRE,2018 (Health Behaviour in School – Aged Children), 10 – 11 years old), 7 Years old, **ALSPAC** (Avon Longitudinal Study of Parents & Children, UK) 7.5 & 10.5 Years old.

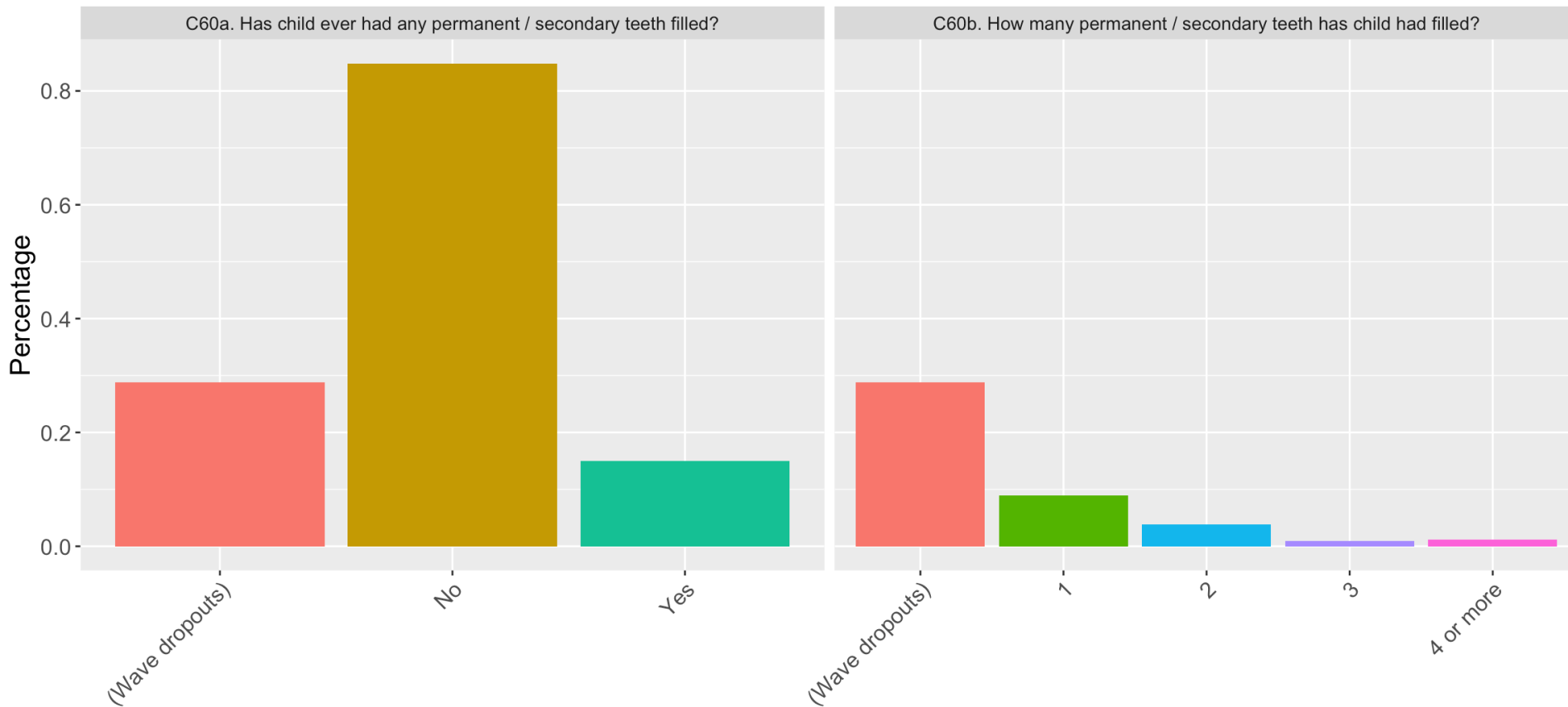
Dentist Visit Frequency at 3, 5 and 9 Years of Age

Problem Dental Visit at 3 years (w2), 5 years (w3) and 9 years of age (w5)



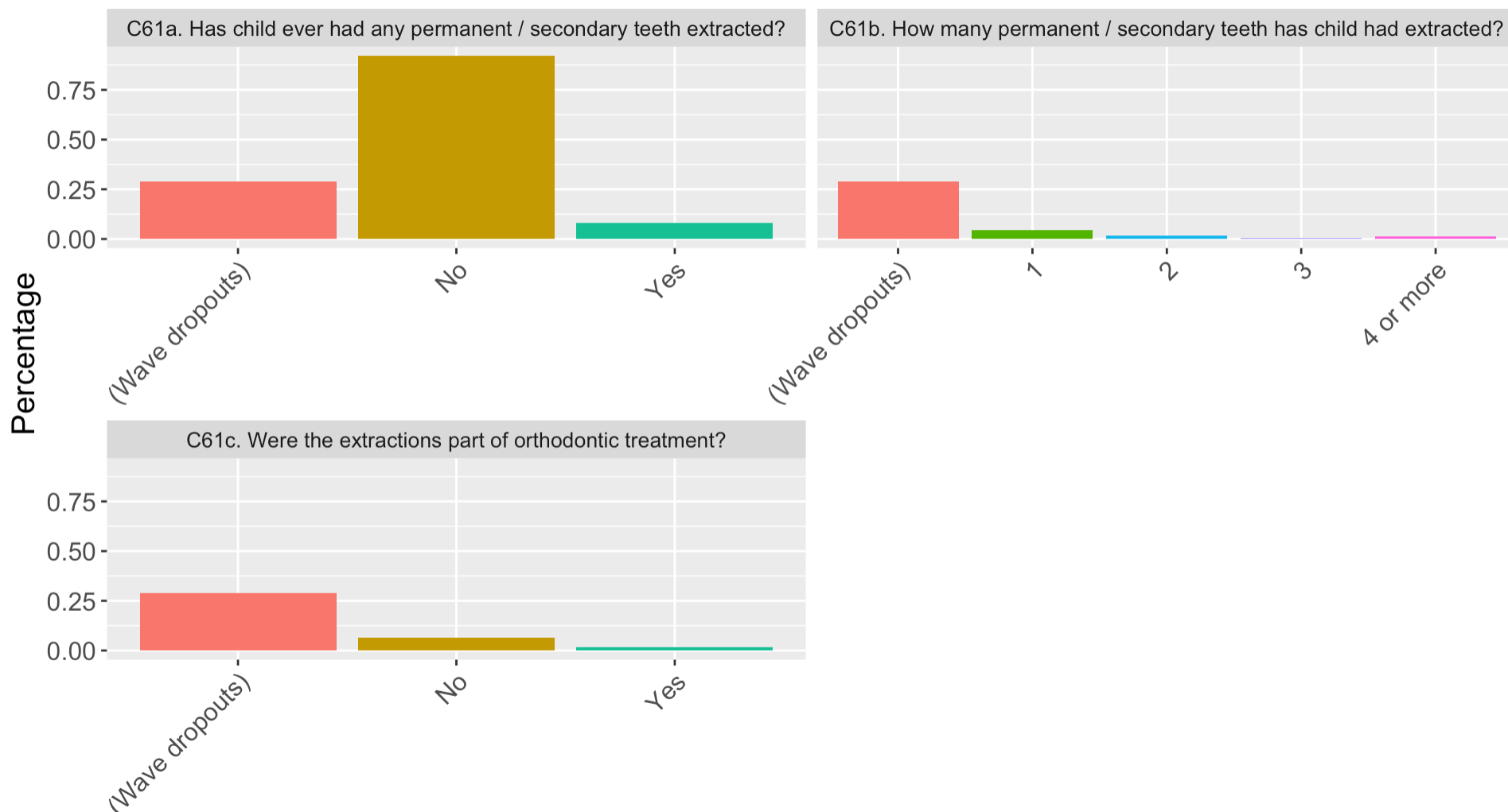
Permanent Teeth Fillings at 9 Years of Age

Dental fillings at 9 years of age



Permanent Teeth Extractions at 9 Years of Age

Dental extractions at 9 years of age

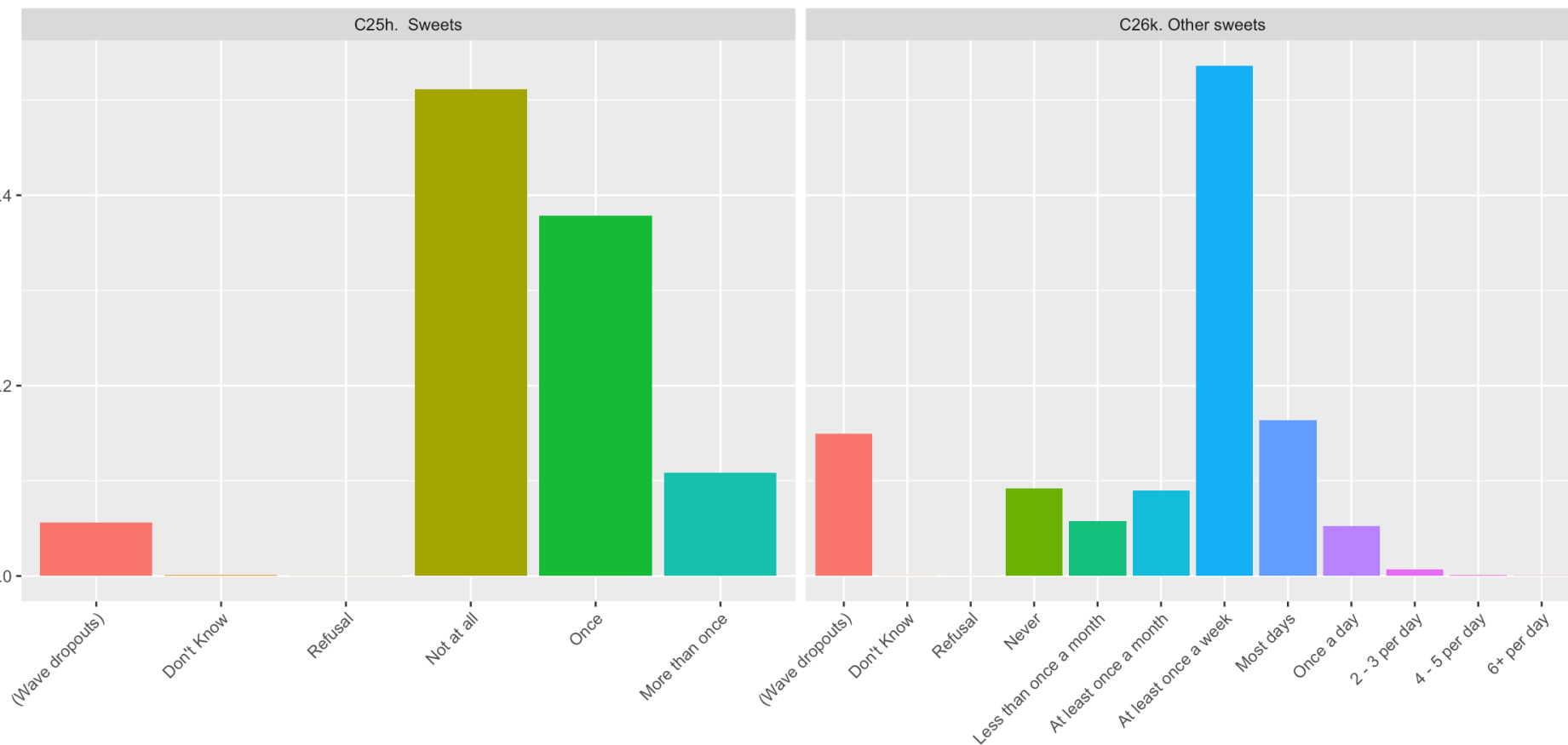


Cariogenic Food and Drink Consumption at 3, 5 and 9 Years of Age



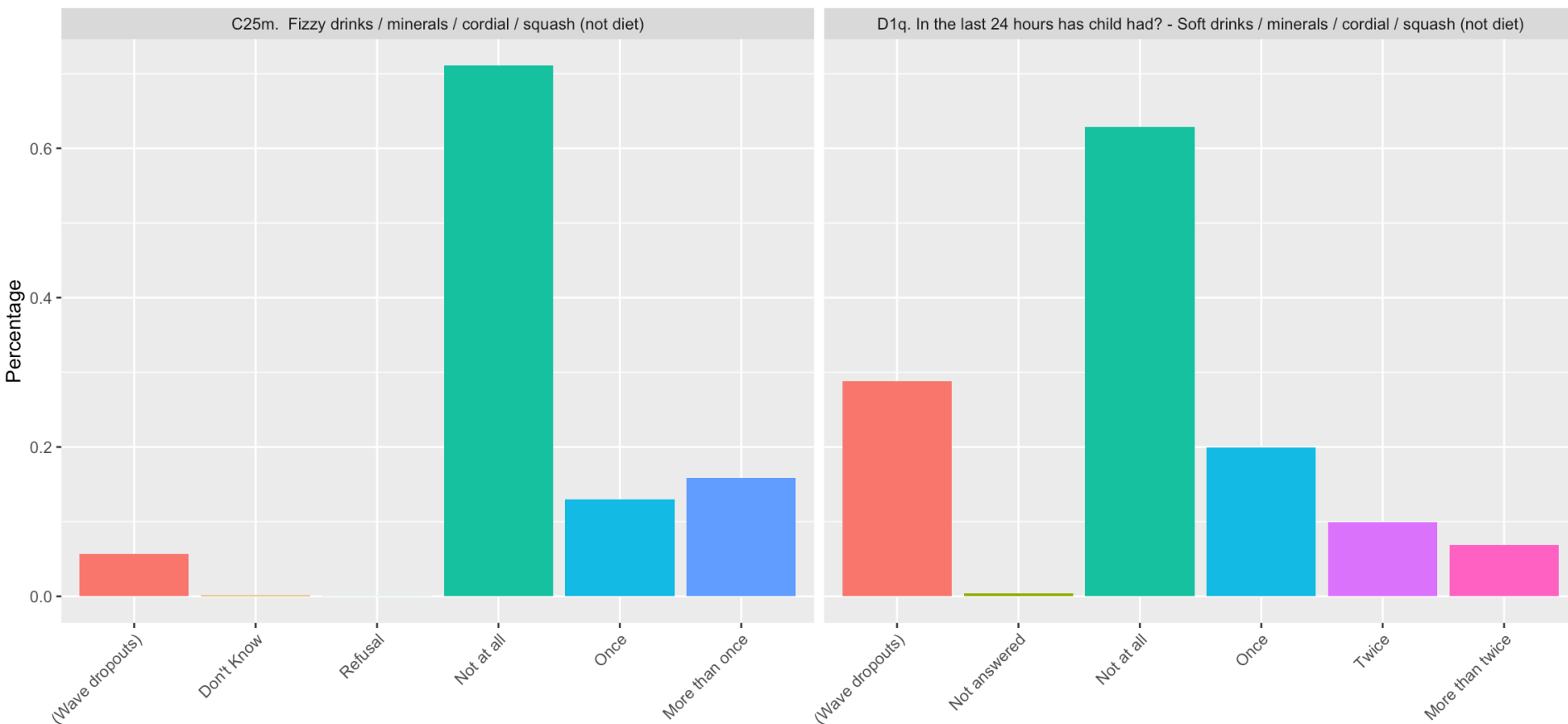
Sweet Intake of Children at 3 and 5 Years of Age

Sweets



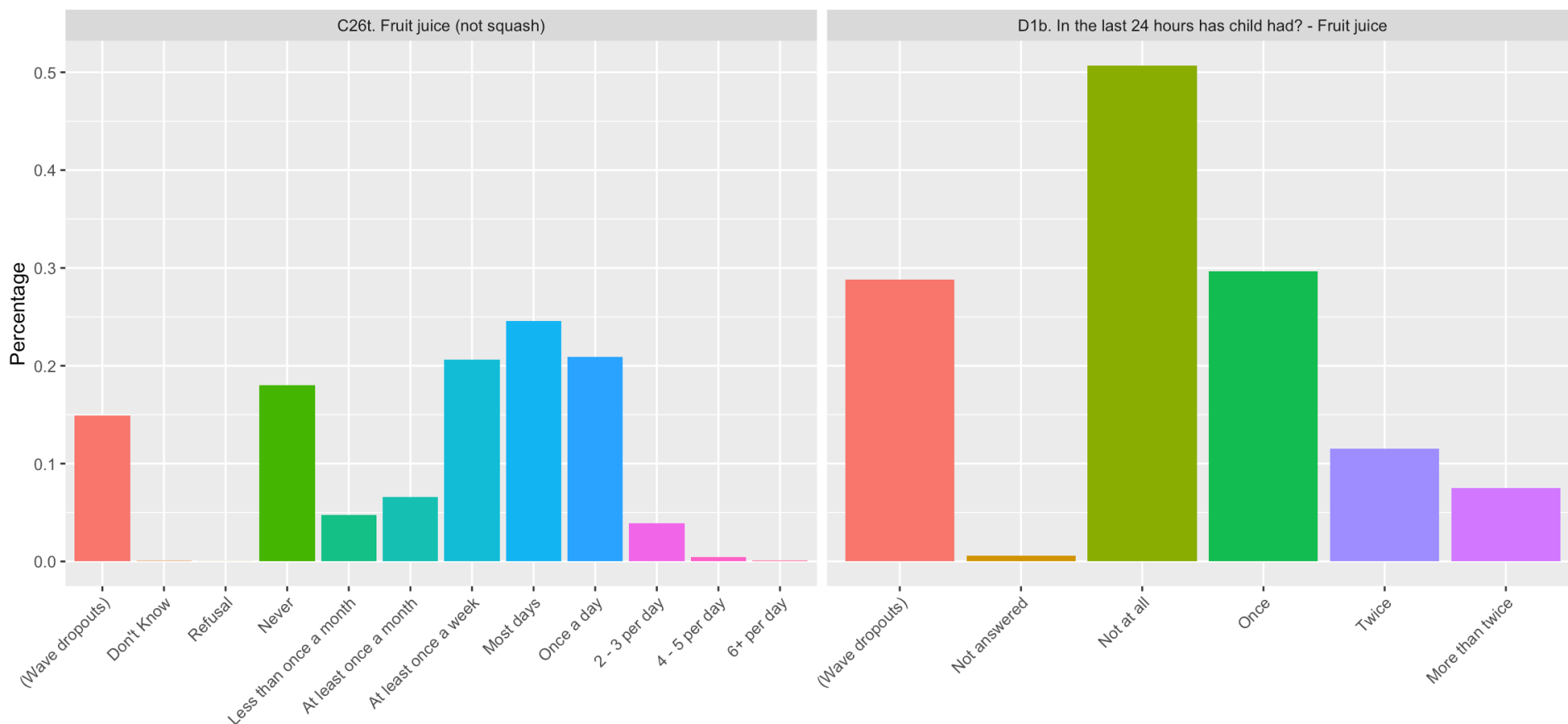
Soft Drink Consumption of Children at 3 and 9 Years of Age

Soft drinks not diet



Fruit Juice Intake of Children at 5 and 9 Years of Age

Juices



Comparison with Other Studies

Cariogenic foods and drinks	GUI Child Cohort (9 years) - 2008		ALSPAC (UK) (10.5 years)		HBSC(10-11years) 2018		WHO COSI (IRE) 2015-17 (7 years)	
	Boys(%)	Girls(%)	Boys(%)	Girls(%)	Boys(%)	Girls(%)	Boys(%)	Girls(%)
Sweets and confectionary	75.4	74			14-19	12-18	24.3	26.9
Soft drinks	50.8	48.4	94.1	92.7	3-10	2-4	1.1	1.7
Fruit juices	75.5	77.1	89.5	88.4				

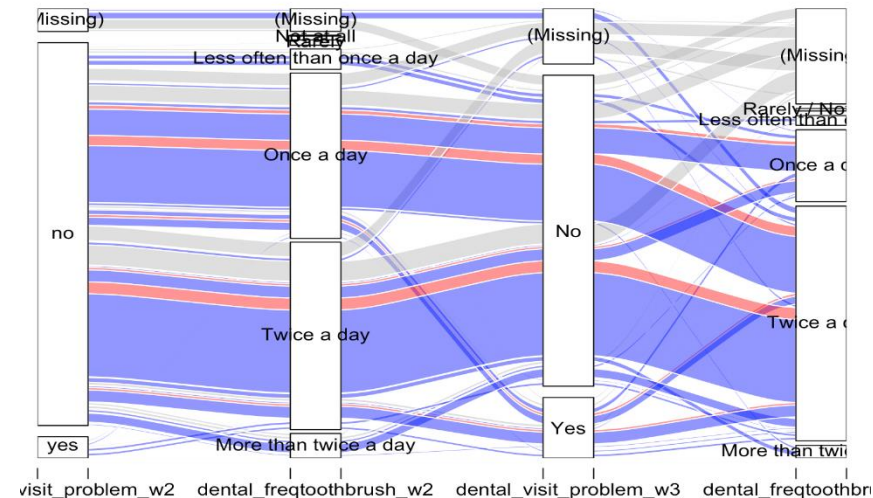
GUI Child cohort Wave 1 2010, 9 Years old, **HBSC IRE, 2018** (Health Behaviour in School – Aged Children), 10 – 11 years old, **WHO COSI IRE, 2015 - 17** (WHO European Childhood Obesity Surveillance Initiative), 7 Years old, **ALSPAC** (Avon Longitudinal Study of Parents & Children, UK) 7.5 & 10.5 Years old, **NCFS II** (National Children’s Food Survey II) 2017-2018, 5 - 12 Years, **NPNS** (National Preschool Nutritional Survey) 2010 – 2011, 3 years old

Conclusion

- Proportion of children adhering to toothbrushing recommendations increased with age (*greater proportion for girls*)
- Problem-based dental visits increased with age
- High prevalence of permanent teeth extractions and fillings considering the age of children
- Consumption of cariogenic food and drink exceeds guidelines

Future Research and Policy Implications

- Longitudinal analysis
- Education regarding diet and oral health
- Common Risk factor approach



References

- Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet (London, England)*, 392, 1789-1858.
- World Health Organization, W. H. O. 2020, *Oral Health Report – Data and Statistics* [Online]. Available: <https://www.euro.who.int/en/health-topics/disease-prevention/oral-health> Available: files/1554/oral-health.html [Accessed 2020/09/14/14:39:59].
- Department of Health Ireland, D. O. H. I. 2019. Smile Agus Sláinte National Oral Health Policy of Ireland. Available: <https://www.gov.ie/en/publication/90687b-smile-agus-slainte-national-oral-health-policy/>