



Families and their oral health

Parental factors can influence children's oral health. The aim of this research is to investigate associations between parents' and children's oral health.

This report provides information on the oral health and oral health impacts experienced by Australian children using data from the 2010 National Dental Telephone Interview Survey. It seeks to determine if this experience is closely related to the oral health of their parents. Additionally, the report explores the role family circumstances play in children's experience of oral health.

Main findings

On average, 9.7% of Australian children experienced toothache and 12.8% avoided some foods because of oral problems. Some 16.7% of children experienced at least one of these impacts. Older children (aged 11–17) were more likely than younger children (aged 5–10) to experience either of these impacts.

Children who experienced an oral health impact in the last 12 months were more likely than children who did not to:

- have a perceived need for dental care reported by their parent
- have their oral health reported by their parent as fair or poor
- have parents who avoided or delayed visiting the dentist themselves due to cost
- be from families who report difficulty having to pay a \$150 dental bill
- have parents who also experienced an oral health impact in the same period (particularly avoidance of some foods).

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Results

Child and parent oral health impacts

Overall, 16.7% of children sampled had experienced an oral health impact (toothache and/or avoiding some foods) in the previous 12 months. Among children, 9.7% of those sampled experienced toothache in the previous 12 months and 12.8% of children avoided some foods in the last 12 months (Table 1).

For children who experienced toothache in the previous 12 months, 19.0% of their parents also experienced toothache in the previous 12 months and for children who avoided some foods in the previous 12 months, 22.6% of their parents also avoided some foods in the same period. Overall, for children who had experienced an oral health impact in the previous 12 months, 23.2% of their parents also reported having an oral health impact in the same period (Table 1).

Table 2 shows that 19.6% of parents had experienced toothache in the previous 12 months, and 20.9% of parents avoided some foods in the previous 12 months. Overall, 30.2% of parents reported having an oral health impact (toothache and/or avoiding some foods) in the previous 12 months.

For parents who experienced toothache in the previous 12 months, 38.5% of their children experienced toothache in the last 12 months and for parents who avoided some foods in the last 12 months, 36.6% of their children also avoided some foods in the previous 12 months. For parents reporting any impact in the previous 12 months, 41.9% of their children were also reported as having an impact in the same period (Table 2).

Table 1: Child's experience of oral health impacts in the last 12 months by parent's experience of oral health impacts in the same period

Oral health impact		Parent experienced the same impact in last 12 months					
		Yes		No		Total	
		Weighted per cent	95% CI	Weighted per cent	95% CI	Weighted per cent	95% CI
Child experienced toothache in last 12 months	Yes	19.0	13.8, 25.5	7.4	5.8, 9.4	9.7	8.0, 11.7
	No	81.0	74.5, 86.2	92.6	90.6, 94.2	90.3	88.3, 92.0
Child avoided some foods in last 12 months	Yes	22.6	17.3, 29.0	10.2	8.4, 12.5	12.8	10.9, 15.0
	No	77.4	71.0, 82.7	89.8	87.5, 91.6	87.2	85.0, 89.1
Child experienced an oral health impact in last 12 months	Yes	23.2	18.7, 28.5	13.9	11.5, 16.7	16.7	14.5, 19.2
	No	76.8	71.5, 81.3	86.1	83.3, 88.5	83.3	80.8, 85.5

Note: CI denotes confidence interval.

Table 2: Parent's experience of oral health impacts in the last 12 months by child's experience of oral health impacts in the same period

Oral health impact		Child experienced the same impact in last 12 months					
		Yes		No		Total	
		Weighted per cent	95% CI	Weighted per cent	95% CI	Weighted per cent	95% CI
Parent experienced toothache in last 12 months	Yes	38.5	29.1, 48.8	17.6	15.2, 20.3	19.6	17.2, 22.3
	No	61.5	51.2, 70.9	82.4	79.7, 84.8	80.4	77.7, 82.8
Parent avoided some foods in last 12 months	Yes	36.6	28.7, 45.3	18.4	15.8, 21.2	20.9	18.4, 23.6
	No	63.4	54.7, 71.3	81.6	78.8, 84.2	79.3	76.6, 81.8
Parent experienced an impact in last 12 months	Yes	41.9	34.6, 49.6	27.8	24.8, 31.1	30.2	27.3, 33.2
	No	58.1	50.4, 65.4	72.2	68.9, 75.2	69.8	66.8, 72.7

Note: CI denotes confidence interval.

Child oral health impacts related to child factors

The distribution of oral health impacts was examined by a number of factors such as age, sex, parent's perception of whether their child needed dental care and parent-rated child oral health. A number of factors were significantly associated with oral health impacts in the previous 12 months (Table 3).

The dental needs of the child were determined by asking parents whether or not they believed their child needed to have a check-up, a filling or an extraction. About 5.4% of children whose parents reported their child did not need dental care had experienced toothache in the previous 12 months compared with 11.7% of children whose parents reported they needed dental care. In addition, 14.8% of children whose parents felt needed dental care were reported to have avoided some foods compared with 8.4% of those whose parents reported no need for dental care for the child.

Parents were asked to rate their child's oral health. A greater percentage of children whose oral health was reported to be fair or poor had experienced toothache (44.2%) or had avoided some foods (49.0%) compared with those with better oral health (7.6% and 10.7%, respectively).

Table 3: Child oral health impacts in the last 12 months by child factors

Child factors	Child experienced toothache in last 12 months		Child avoided some foods in last 12 months		Child had an oral health impact in last 12 months	
	Weighted per cent	95% CI	Weighted per cent	95% CI	Weighted per cent	95% CI
Age group (years)						
5–10	8.7	6.4, 11.8	9.9	7.5, 12.9	12.9	10.1, 16.3
11–14	10.2	7.4, 13.8	17.1	13.1, 21.9	21.5	17.2, 26.6
15–17	11.2	7.7, 16.1	13.4	10.0, 17.7	18.6	14.2, 23.9
Sex						
Male	8.3	6.1, 11.2	11.4	8.9, 14.4	15.2	12.2, 18.7
Female	11.1	8.7, 14.2	14.4	11.6, 17.7	18.4	15.3, 22.0
Child needs dental care						
No	5.4	3.2, 9.0	8.4	5.8, 12.1	11.8	8.5, 16.2
Yes	11.7	9.5, 14.3	14.8	12.4, 17.6	19.0	16.3, 22.1
Parent-rated child oral health						
Excellent/ Very good/Good	7.6	6.1, 9.5	10.7	8.9, 12.7	14.3	12.2, 16.7
Fair/Poor	44.2	32.0, 57.1	49.0	36.3, 61.8	57.0	44.6, 68.6
All children	9.7	8.0, 11.7	12.8	10.9, 15.0	16.7	14.5, 19.2

Note: CI denotes confidence interval.

Child oral health impacts related to parental factors

The only parental factor significantly related to child experience of toothache was the gender of the responding parent. A greater proportion of children whose female parent responded reported having toothache in the previous 12 months (12.2%) compared with children whose male parent responded (6.1%) (Table 4). Overall, a greater proportion of children of female responding parents reported having an oral health impact in the previous year (19.6%) compared with children of male parents who responded (12.6%).

Table 4: Child oral health impacts in the last 12 months by parental factors

Parental factors	Child experienced toothache in last 12 months		Child avoided some foods in last 12 months		Child had an oral health impact in last 12 months	
	Weighted per cent	95% CI	Weighted per cent	95% CI	Weighted per cent	95% CI
Parent's sex						
Male	6.1	4.3, 8.7	10.4	7.9, 13.6	12.6	9.8, 16.0
Female	12.2	9.7, 15.2	14.5	11.8, 17.5	19.6	16.5, 23.1
Parent's age group (years)						
18–34	11.1	5.5, 21.2	9.8	4.9, 18.3	14.9	8.3, 25.3
35–44	10.9	8.6, 13.7	13.1	10.6, 16.1	17.3	14.3, 20.6
45–54	6.8	4.7, 9.8	13.5	10.3, 17.6	16.5	12.9, 20.8
55+	9.3	3.3, 23.3	12.3	5.7, 24.6	16.3	8.1, 30.0
Parent's age when child born (years)						
18–29	13.1	9.8, 17.3	13.9	10.6, 18.0	18.8	14.8, 23.5
30–39	7.8	5.9, 10.1	12.5	10.1, 15.4	15.9	13.2, 19.0
40+	7.5	3.4, 15.6	9.7	5.1, 17.8	13.0	7.3, 22.0
Parent employment						
Employed	8.6	6.9, 10.6	11.8	9.8, 14.0	15.2	13.0, 17.7
Non-employed	15.0	9.9, 22.1	17.7	12.3, 24.8	24.1	17.7, 31.9
Household structure						
Sole adult household	11.7	6.9, 19.1	11.4	6.2, 20.3	18.0	11.4, 27.3
2+ adults household	9.4	7.6, 11.5	13.0	11.0, 15.3	16.5	4.3, 19.1
Highest level of education						
Post-secondary	9.5	7.5, 11.9	12.6	10.4, 15.1	16.7	14.1, 19.5
No post-secondary	10.3	7.3, 14.4	13.4	9.8, 18.2	16.9	12.9, 21.9

Note: CI denotes confidence interval.

Child oral health impacts related to the dental visiting factors of their parents

If parents reported avoiding or delaying dental visiting because of cost, a greater proportion of their children had toothache in the last 12 months (13.8%) compared with children whose parents did not report the same factor (7.2%). Overall, children whose parents reported avoiding or delaying dental visiting because of cost were more likely to report having had an oral health impact in the previous 12 months (21.2%) compared with children whose parents did not report avoiding or delaying dental visiting because of cost (14.0%) (Table 5).

Table 5: Child oral health impacts in the last 12 months by parent dental visiting factors

Parent dental visiting factors	Child experienced toothache in last 12 months		Child avoided some foods in last 12 months		Child had an oral health impact in last 12 months	
	Weighted per cent	95% CI	Weighted per cent	95% CI	Weighted per cent	95% CI
Parent needs dental care						
No	7.8	4.8, 12.4	9.0	6.2, 12.9	13.2	9.4, 18.1
Yes	10.3	8.4, 12.7	14.1	11.8, 16.8	17.9	15.3, 20.8
Time since last dental visit						
Last 12 months	9.5	7.3, 12.4	11.5	9.3, 14.2	16.0	13.3, 19.2
2+ years (including Never)	9.9	7.5, 13.0	14.7	11.5, 18.5	17.7	14.3, 21.8
Avoided or delayed dental visit in last 12 months due to cost						
Yes	13.8	9.8, 17.3	16.2	12.8, 20.3	21.2	17.2, 25.9
No	7.2	5.9, 10.1	10.7	8.6, 13.3	14.0	11.6, 16.8
Usual reason for dental visit						
Check-up	8.0	6.1, 10.3	12.0	9.7, 14.7	15.4	12.8, 18.4
Problem	12.1	9.1, 15.9	14.0	10.8, 17.8	18.6	14.9, 23.0
Usually go to a particular dentist						
Yes	8.5	6.8, 10.7	12.1	10.0, 14.6	15.6	13.2, 18.3
No	13.8	8.7, 21.0	12.3	8.0, 18.5	19.3	13.4, 27.1

Note: CI denotes confidence interval.

Child oral health impacts related to affordability factors

Some 18.7% of children whose parents reported that they would have difficulty paying a \$150 dental bill had experienced toothache in the last 12 months compared with 7.4% of those with no difficulty. Similarly, 18.7% of children whose parents reported difficulty had avoided some foods compared with 11.3% of those with no difficulty with a \$150 bill. Overall, a greater proportion of children whose parents reported difficulty paying a \$150 dental bill had experienced an oral health impact in the last 12 months (24.5%) compared with those children whose parents did not report any difficulty paying a \$150 dental bill (14.7%).

Equivalised income is a measure of household income which takes account of differences in a household's size and composition. This variable enables comparison of the relative incomes of households of different sizes and composition. Among families in the lowest equivalised income category, a greater proportion of children had experienced toothache in the previous 12 months (13.4%) compared with those in the highest equivalised income category (6.1%) (Table 6).

Table 6: Child oral health impacts in the last 12 months by affordability factors

Affordability factors	Child experienced toothache in last 12 months		Child avoided some foods in last 12 months		Child had an oral health impact in last 12 months	
	Weighted per cent	95% CI	Weighted per cent	95% CI	Weighted per cent	95% CI
Have private dental insurance						
Yes	7.7	5.8, 10.1	12.5	10.1, 15.4	15.8	13.1, 18.9
No	12.1	9.3, 15.6	13.2	10.3, 16.8	17.9	14.5, 22.0
Difficulty paying a \$150 dental bill						
Yes	18.7	13.8, 24.8	18.7	13.8, 24.9	24.5	18.9, 31.2
No	7.4	5.7, 9.4	11.3	9.3, 13.6	14.7	12.4, 17.3
Dwelling ownership						
Rented accommodation	11.0	6.8, 17.3	9.7	5.8, 16.1	16.2	10.9, 23.5
Other	9.3	7.6, 11.4	13.8	11.7, 16.1	16.9	14.7, 19.5
Equivalised income^(a)						
Low	13.4	9.9, 17.9	15.1	11.2, 20.1	20.4	15.9, 25.9
Middle	9.8	6.9, 13.6	13.1	10.0, 16.9	17.0	13.3, 21.4
High	6.1	4.2, 9.0	11.0	8.3, 14.4	13.3	10.3, 16.9
Usually go to a particular dentist						
Cardholder	14.0	9.2, 20.8	14.8	9.8, 21.7	20.3	14.3, 28.0
Non-cardholder	8.8	7.1, 10.9	12.4	10.4, 14.7	16.0	13.7, 18.6

(a) Equivalised income categories: Low = \$4,615–\$28,125; Middle = \$28,205–\$43,750; High = \$44,000–\$80,770.

Categories have been defined based on dividing respondents into three groups of equal size.

Note: CI denotes confidence interval.

Child oral health impacts related to parent's experience of oral health impacts

Children of parents who reported having toothache in the last 12 months were more likely to report having had toothache in the same period (19.0%) compared with children of parents who did not have toothache in the previous 12 months (7.4%) (Table 7).

More than twice the proportion of children of parents who avoided some foods reported experiencing toothache and avoiding some foods in the last 12 months relative to parents who did not report the same impact (19.7% compared with 7.0%, and 22.6% compared with 10.2%, respectively). Overall, children whose parents reported avoiding some foods were more likely to report having had an oral health impact in the previous 12 months (28.8%) than children whose parents did not report avoiding some foods (13.5%).

Compared with children of parents who did not report having an oral health impact in the previous 12 months, children of parents who did report having an oral health impact were more likely to report toothache experience (15.8% compared with 7.1%), avoidance of some foods (17.9% compared with 10.6%) and experience of an oral health impact (23.2% compared with 13.9%) in the same period.

Table 7: Child oral health impacts in the last 12 months by parent oral health impacts

Parent oral health impacts	Child experienced toothache in last 12 months		Child avoided some foods in last 12 months		Child had an oral health impact in last 12 months	
	Weighted per cent	95% CI	Weighted per cent	95% CI	Weighted per cent	95% CI
Toothache in last 12 months						
Very often/ Often/ Sometimes	19.0	13.8, 25.5	15.8	11.2, 21.7	22.7	17.2, 29.3
Hardly ever/Never	7.4	5.8, 9.4	12.1	10.0, 14.5	15.3	13.0, 17.9
Avoided some foods in last 12 months						
Very often/Often/Sometimes	19.7	14.7, 26.0	22.6	17.3, 29.0	28.8	22.8, 35.6
Hardly ever/Never	7.0	5.5, 9.0	10.2	8.4, 12.5	13.5	11.4, 16.1
Parent self-rated oral health						
Excellent/Very good/Good	8.8	7.0, 10.9	12.0	10.0, 14.4	15.9	13.5, 18.5
Fair/Poor	13.8	9.5, 19.5	16.2	11.3, 22.5	20.5	15.1, 27.2
Any impact						
Yes	15.8	12.0, 20.5	17.9	13.9, 22.7	23.2	18.7, 28.5
No	7.1	5.4, 9.2	10.6	8.6, 13.1	13.9	11.5, 16.7

Note: CI denotes confidence interval.

Discussion

- ✦ This report investigates the association between the oral health of parents and their children in Australia, and finds that parental factors may have an important effect on their child's experience of oral health impacts.
- ✦ Parental factors associated with a higher risk of a child's experience of oral health impacts included parent dental visiting behaviour (i.e. avoiding or delaying dental visits because of cost), parent affordability factors (i.e. difficulty having to pay a \$150 dental bill), and a parent's experience of oral health impacts (particularly avoidance of some foods).
- ✦ Children whose parents reported that their child had fair or poor oral health or was in need of dental care were at greater risk of experiencing an oral health impact in the previous 12 months (i.e. toothache and/or avoidance of some foods) compared with children whose parents did not report the same concerns.

Data source and methodology

Data presented in this report were sourced from the National Dental Telephone Interview Survey (NDTIS) 2010. The NDTIS is an interview survey of a random sample of Australian residents aged 2 years and over in all states and territories. A total of 10,237 people aged 2 or more years were interviewed and asked a range of questions relating to their oral health, access to dental care, dental treatment received and affordability of dental care. Further details about sampling and recruitment of subjects are available elsewhere (Chrisopoulos et al. 2011).

Data were weighted to account for the different probabilities of selection to reflect the 2009 estimated resident population (ABS 2009).

Only data for matched child–parent interviews with available data on use of dental services were included in the analysis presented in this report. Where the matched survey respondent was not the parent, these children were excluded from analysis. Only children aged 5–17 years were included in the analyses as less than half the children aged 2–4 years sampled had ever made a dental visit. This report presents findings from 1,765 (unweighted sample size) matched child–parent interviews.

Oral health impact measures among children

This report used parents' ratings of their children's oral health. Parents were asked:

- ✦ the frequency with which their child suffered from toothache in the last 12 months, i.e.
‘During the last 12 months, how often has [child's name] had toothache?’
Response categories: Very often, Often, Sometimes, Hardly ever, Never
- ✦ how often their child had to avoid eating some foods in the last 12 months because of problems with their teeth or mouth, i.e.
‘How often has [child's name] had to avoid eating some foods because of problems with their teeth or mouth during the last 12 months?’
Response categories: Very often, Often, Sometimes, Hardly ever, Never

A child was regarded as experiencing toothache or avoiding some food if the response to the relevant question was Very often, Often or Sometimes. Consequently, toothache experience and avoidance of some foods in the last 12 months was grouped into Very often/Often/Sometimes versus Hardly ever/Never.

If the child experienced toothache and/or had avoided some foods in the previous 12 months they were regarded as having had an oral health impact in the previous 12 months.

Criteria for determining statistical significance

Percentages presented in this report are estimates of the true population values. These estimates have some degree of uncertainty, which is expressed in this report using 95% confidence intervals (95% CIs). The 95% CI signifies the likely lower and upper limits of the range of values within which the true population percentage would fall. In this context, 'likely' means that there is a 95% probability that the true population value lies between the lower and upper limits.

In this report, 95% CIs were used as a guideline to identify differences between population subgroups that are statistically significant. When there was no overlap between the 95% CIs for two groups, the difference between the groups was deemed to be statistically significant.

Percentages and their associated 95% CIs were generated using the SPSS Complex Samples procedure. This procedure allowed for the stratified sampling design used in the National Dental Telephone Interview Survey and applied sampling weights to generate population estimates and 95% CIs.

References

Australian Bureau of Statistics (ABS) 2009. Super CUBE dataset. Population estimates by age and sex, Australia, by geographical classification (ASGC 2009) at 30 June 2009. Accessed at: <http://www.abs.gov.au/AUSSTATS/subscriber.nsf/log?openagent&32350ds0001_2004_2009.srd&3235.0&DataCubes&1F7884CDABE07FD9CA25777500187B97&0&2009&05.08.2010&Latest.> Viewed 2 December 2010.

Chrisopoulos S, Beckwith K & Harford JE 2011. Oral health and dental care in Australia: key facts and figures 2011. Cat. no. DEN 214. Canberra: Australian Institute of Health and Welfare.

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