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AIHW Dental Statistics
and Research Unit
Research Report No. 41

**Geographic variation in
oral health and use of dental
services in the Australian
population 2004–06**



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This report provides information on geographic variation in oral health and use of dental services in the Australian population in 2004–06. People from outside capital cities are known to have less access to dental care and water fluoridation than residents of capital cities. Differences by age group, tooth loss, oral health status, dental visiting patterns and dental treatment within the previous year are presented.

Main findings

All measures of tooth loss, poorer oral health and unfavourable dental visiting patterns were more prevalent among non-capital-city residents than capital-city dwellers:

- Complete tooth loss was more prevalent among older age groups and non-capital-city residents.
- Inadequate natural dentition (having less than 21 teeth) was more prevalent among non-capital-city residents, particularly in the 55–74 years age group.
- Untreated decay was more prevalent among residents of non-capital-city areas than capital-city dwellers, and was most pronounced in the 15–34 years age group.
- People living in non-capital-city areas were more likely to have a problem-oriented pattern of dental attendance, and were:
 - ❖ less likely to visit for check-ups
 - ❖ less likely to make an annual dental visit
 - ❖ less likely to have a particular dentist that they usually visit.
- People living in non-capital-city areas were less likely to have made a dental visit within the previous 12 months, and those who had visited were:
 - ❖ more likely to have had one or more teeth extracted
 - ❖ less likely to have received a professional clean and polish.

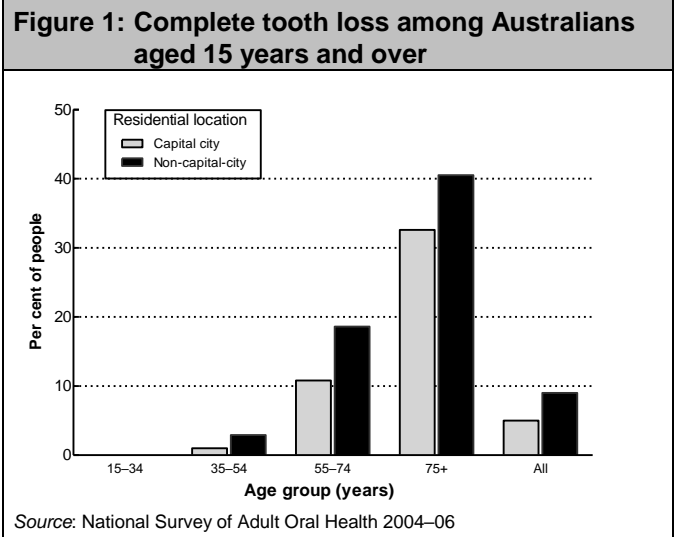
Dentate status

The cumulative effects of past dental disease and treatment are reflected in tooth loss and the wearing of dentures. Adults from non-capital-city locations exhibit greater frequency of tooth loss, possibly indicating differing historical treatment patterns.

People with no natural teeth have limited oral function and, although they wear dentures, they report more oral health problems on average than people with natural teeth.

Complete tooth loss

Prevalence of complete tooth loss increased sharply across age groups (Figure 1). Overall, people who lived in areas outside capital cities had almost double the prevalence of complete tooth loss as capital-city dwellers (9.0% compared with 5.0%), with the difference evident in all age groups.



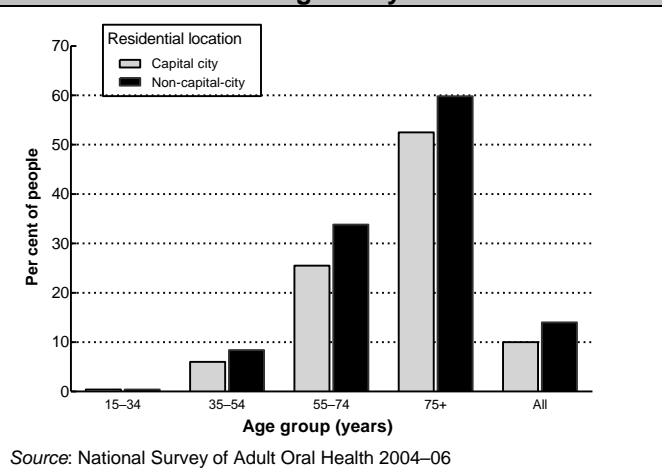
Within age groups there was a three-fold difference in prevalence among non-capital-city versus capital-city dwellers for 35–54-year-olds, and almost double the prevalence for 55–74-year-olds (18.6% versus 10.8%). Among those aged 75 years and over, 40.5% of people residing in non-capital-city areas had no teeth compared with 32.6% of capital-city dwellers.

Inadequate natural dentition

Traditionally, dentists have attempted to retain teeth so that the patient maintains oral function as well as an acceptable appearance. People with an inadequate dentition, defined here as having fewer than 21 remaining teeth, have been shown to be more likely to suffer impaired quality of life related to oral health compared to adults with more teeth.

The prevalence of an inadequate dentition was strongly associated with age, being very low in 15–34-year-olds but affecting more than half of those aged 75 years and over (Figure 2). People living in non-capital-city areas were more likely than capital-city dwellers to have less than 21 remaining teeth (14.0% compared with 10.0%). The difference was greatest in the 55–74 years age group (33.8% versus 25.5%).

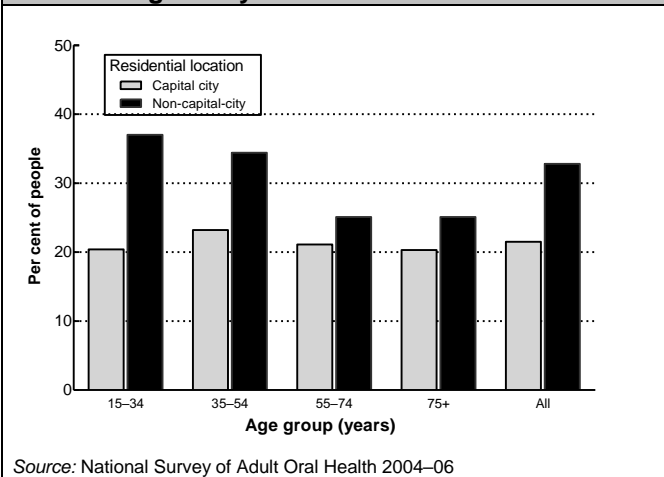
Figure 2: Inadequate dentition among dentate Australians aged 15 years and over



Teeth with untreated dental decay

Untreated decay reflects both the prevalence of dental decay in the population and access to dental care for treatment. Untreated decay was more prevalent among residents of non-capital-city areas than capital-city dwellers (32.8% compared with 21.5%) (Figure 3). The difference was greatest in the 15–34 years age group, where 37% of non-capital-city residents had decayed teeth compared with 20% of capital-city dwellers, almost a two-fold difference.

Figure 3: Decayed teeth among dentate Australians aged 15 years and over



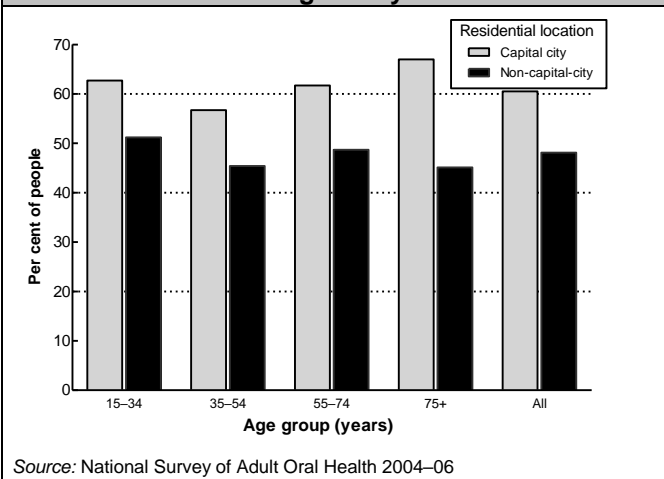
Usual pattern of dental attendance

Dental visiting behaviour is closely associated with oral health. People who visit regularly and attend for a check-up rather than a dental problem have less invasive treatments than people who have a problem-oriented pattern of dental attendance.

Usual reason for dental visit

There was considerable variation in the proportion of people usually visiting for a check-up, being 48% of residents of non-capital-city areas compared with 60.5% of capital-city dwellers (Figure 4). The difference persisted over all age groups, and was greatest in those aged 75 years and over (45.1% versus 67.0%).

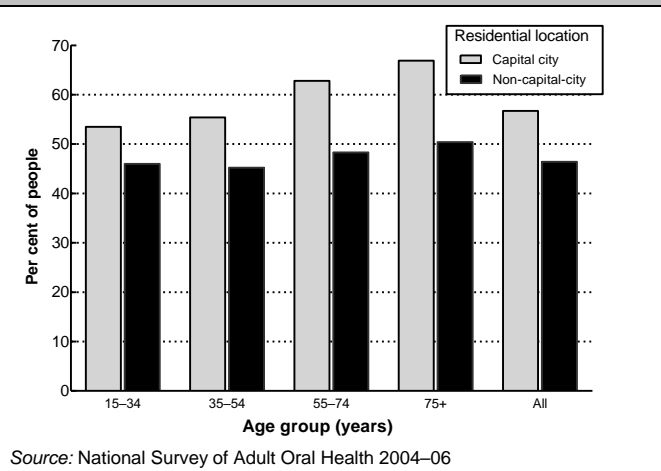
Figure 4: Visit for a check-up among dentate Australians aged 15 years and over



Usually visit annually

Just over 46% of people from non-capital-city areas usually made an annual dental visit compared with 57% of capital-city dwellers. There was little variation across age groups among non-capital-city residents, with between 45% and 50% visiting annually. The percentages of capital-city dwellers were consistently higher and increased steadily across age groups, from 54% among 15-34-year-olds to 67% among those aged 75 years and over (Figure 5).

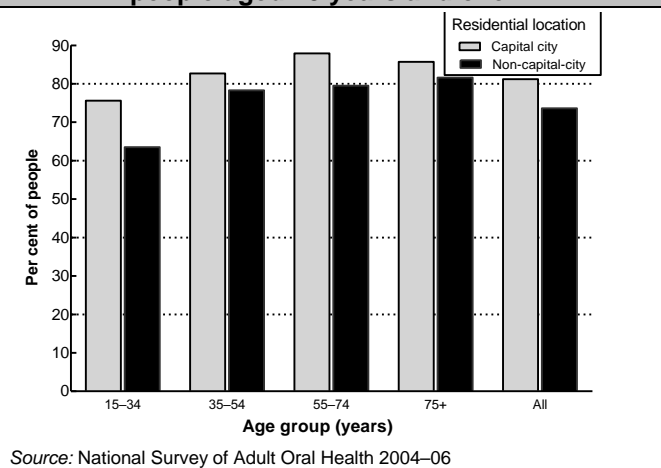
Figure 5: Usually make annual dental visit – dentate Australians aged 15 years and over



Usually visit the same dentist

People who report that they usually attend the same dentist are assumed to have an ongoing relationship with a particular dentist and a continuity of dental care. It was not surprising to find that people living in non-capital-city areas were less likely to have a dentist that they usually attended. Among all ages combined, 73.6% of non-capital-city residents usually visit the same dentist compared with 81.2% of capital-city dwellers (Figure 6).

Figure 6: Usually visit same dentist – dentate people aged 15 years and over

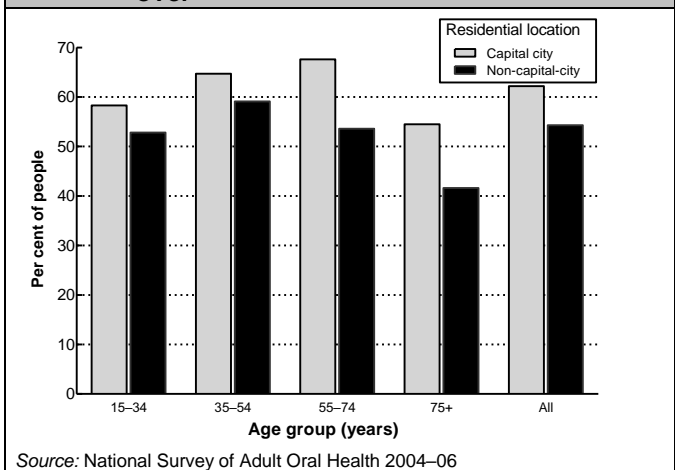


The differences were most pronounced in 15-34-year-olds and 54-74-year-olds (63.5% versus 75.6% and 79.5% versus 87.9% for non-capital-city and capital-city dwellers respectively).

Dental visit in previous 12 months

Geographic differences existed in the percentages of people making a dental visit within the previous 12 months, being 54% of non-capital-city residents compared with 62% of capital-city dwellers (Figure 7). Visiting among capital-city dwellers increased across the younger age groups, peaked at 68% in 55-74-year-olds and then dropped off quite sharply among those aged 75 years and over. The decline in visiting among non-capital-city residents began at an earlier age (55 years and over) and was more pronounced. The greatest differences between non-capital-city and capital-city dwellers occurred in the 55-74 years age group (where 54% compared with 68% had visited in the previous 12 months) and those aged 75 years and over (42% compared with 55%).

Figure 7: Dental visit in previous 12 months – dentate Australians aged 15 years and over



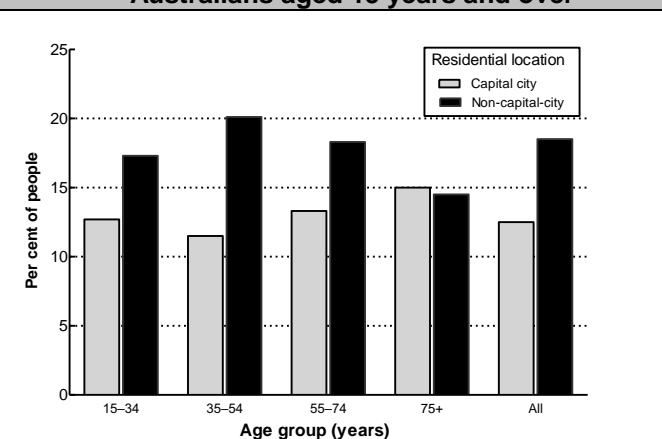
Treatment in last 12 months

People who have a pattern of irregular or problem-oriented visiting are less likely to receive preventive treatments. They are also more likely to have invasive treatments, which may be due to the deterioration of teeth that have not received timely care.

Extraction in last 12 months

Extraction of a tooth indicates that all previous attempts to restore that tooth have failed. People who lived in a non-capital-city area were more likely to have had one or more teeth extracted within the previous 12 months than capital-city dwellers (18.5% compared with 12.5%) (Figure 8). The difference was particularly noticeable in the 35–54 years age group, where 20% of residents of non-capital-city areas received extractions compared with 11.5% of capital-city dwellers.

Figure 8: Extraction <12 months – dentate Australians aged 15 years and over

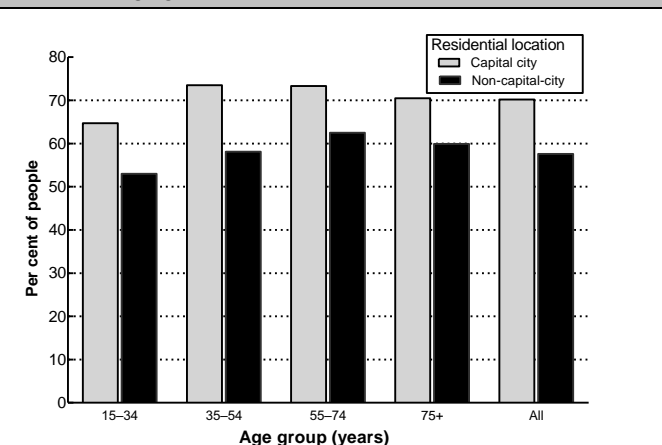


Source: National Survey of Adult Oral Health 2004–06

Scale and clean in last 12 months

People from non-capital-city regions who visited the dentist within the previous 12 months were less likely to receive a professional clean and polish treatment than their counterparts from capital cities. Overall, 58% of non-capital-city residents had their teeth professionally cleaned compared with 70% of capital-city dwellers (Figure 9). The difference was most noticeable among people aged 35–54 years (74% versus 58%).

Figure 9: Professional clean & polish <12 months – dentate Australians aged 15 years and over



Source: National Survey of Adult Oral Health 2004–06

Data collection

Data presented in this publication are from the National Survey of Adult Oral Health 2004–06. A sample of 14,123 persons aged 15 years and over participated in the telephone interview component of the survey. Sample sizes varied between states and territories according to the estimated resident population differences, with the largest sample from New South Wales (3,621 persons) and the smallest from the Australian Capital Territory (984 persons). Dental examinations were carried out on 5,505 subjects.

Data were weighted to represent the age and sex distribution of the Australian population at the time of the survey. Participants were classified into four dental generation age groups: 15–34 years, 35–54 years, 55–74 years, and 75 years and over. Where attention is drawn to differences, the results are statistically significant at the 5% level.

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The AIHW Dental Statistics and Research Unit (DSRU) is a collaborating unit of the Australian Institute of Health and Welfare, established in 1988 at The University of Adelaide and located in the Australian Research Centre for Population Oral Health (ARCPOH), School of Dentistry, The University of Adelaide. DSRU aims to improve the oral health of Australians through the collection, analysis and reporting of information on oral health and access to dental care, the practice of dentistry and the dental labour force in Australia.

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