

# Dental visiting among the Australian adult dentate population

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## INTRODUCTION

Access to appropriate and affordable dental services is one of the themes that underpin Australia's National Oral Health Plan.<sup>1</sup> In particular, the Plan has a strong focus on reducing inequalities in access to dental services. Inequalities arise through barriers that operate at the level of the individual, dental profession and dental care system. Access to dental services is also important in informing discussion on a sufficient and appropriately skilled dental workforce, a further focus of the Plan. In particular, trends in access are important in projecting future requirements for dental visits. While a complete picture of access to dental services can only be gained from a number of indicators, time since last dental visit is a key indicator of availability and obtainability to dental services.

The purpose of this Data Watch is to report on the time since last dental visit among the Australian adult dentate population in the 2004–2006 period. It also reports the trend in time since last visit across the preceding 17-year period.

## METHODS

The most recent data about time since last visit are available from the National Survey of Adult Oral Health 2004–06 (NSAOH).<sup>2</sup> NSAOH consisted of three data collection components: a computer-aided telephone interview (CATI); a dental examination; and a mailed questionnaire survey. Data on time since last visit was collected as part of the CATI so only the methods relevant to that collection component will be described.

NSAOH used a three-stage, stratified clustered sampling design. The first stage selected postcodes from strata defined by capital city and rest of each state/territory. In the second stage, households were selected from within the sampled postcodes from a database of residential phone numbers listed in the electronic white pages. Where possible, households received a letter in advance of a telephone call. In the third stage, one person aged 15+ years from each household was randomly selected and invited to participate in the CATI.

Once the target person was selected and agreed to participate, interviewers read questions from a computer screen and recorded answers directly onto a computer. Every effort was made to interview the target person including multiple approaches. Where appropriate, the interview was

conducted in languages other than English or information was obtained from another person in the household where the target person was unable to communicate by telephone.

The interview was based on previous National Dental Telephone Interview Surveys conducted by ARCPOH. There were a maximum of 79 questions, several with multiple response categories. Interviews were conducted by 29 trained interviewers. Responses that were entered by interviewers were saved into data files for subsequent analysis.

All the data items used in this report were derived from the CATI. A total of 14 123 adults who were 15+ years old were interviewed. Of these, 12 861 were dentate and are the subjects in this report. The data were weighted to reflect the age, sex and state/territory distribution of the Australian population in 2005.

The trends in time since last dental visit were established by comparison with the earlier National Oral Health Survey of Australia 1987–88 (NOHSA).<sup>3</sup> NOHSA was a survey of a representative sample of children and adults living in the six states and the Australian Capital Territory. All occupants of residential dwellings targeted within selected Census Collection Districts through a similar stratified, cluster sampling design were asked a limited number of interview questions, including time since last visit, and underwent a dental examination. For this report the NOHSA data were also weighted to reflect age, sex and state/territory distribution of the Australian population, excluding the Northern Territory, in 1986.

The time between the two surveys allows analysis of two phenomena: an age group analysis where adults of the same age some 17 years apart in time are compared; and a birth cohort analysis where cohorts of adults born across the same period of time are compared at two subsequent times. Therefore, the age-group analysis reflects changes across a period of time, while the birth cohort analysis reflects ageing for each birth cohort.

## RESULTS

### National Survey of Adult Oral Health 2004–06 findings

Table 1 presents the percentage of dentate adults who made a dental visit in the last 12 months and those who had last visited more than five years ago. The data are presented by 10-year age groups. For each age group the percentage whose last visit was in the last 12 months or more than five years ago by age is listed plus the 95 per cent confidence interval. Some 62.1 per cent of Australian dentate adults had

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**Table 1. Percentage of dentate adults whose last dental visit was within the last 12 months or more than 5 years ago by age**

Age	Within last 12 months		More than 5 years ago	
	%	95% CI	%	95% CI
15–24	63.0	59.8–66.1	8.0	6.4–10.1
25–34	50.1	47.2–53.0	14.6	12.6–17.0
35–44	60.2	57.9–62.5	9.8	8.5–11.3
45–54	66.9	64.6–69.1	6.5	5.4–7.8
55–64	69.6	67.0–72.1	7.0	5.8–8.3
65–74	67.6	64.5–70.6	9.5	7.8–11.5
75–84	65.5	60.8–69.9	12.1	9.4–15.5
85+	69.0	60.1–76.7	10.3	6.0–17.0
<b>All people</b>	<b>62.1</b>	<b>60.9–63.2</b>	<b>9.5</b>	<b>8.9–10.2</b>

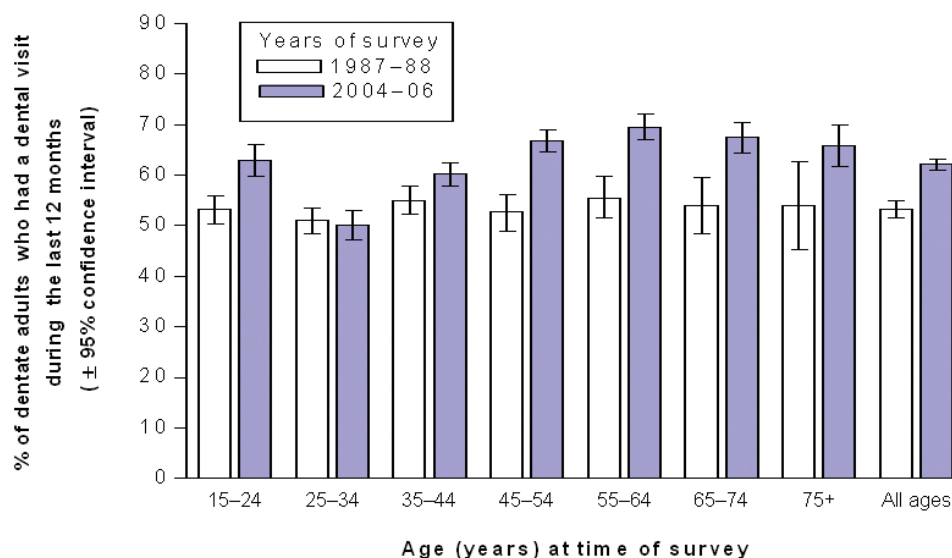
visited within the last 12 months, while 9.5 per cent had not visited for more than five years. The percentage who visited within the last 12 months is high among 15–24 year olds, low among 25–34 year olds, then high across middle-aged adults with no decrease across older age groups. The percentage of dentate adults whose last visit was more than five years ago by age shows the opposite trend. The percentage of dentate adults whose last visit was more than five years ago was highest in the 25–34 year olds where it was almost 15 per cent of adults of this age group.

Time since last dental visit significantly varied by social characteristics (Table 2). The percentage of dentate adults who visited within the last 12 months was higher among female adults, those living in capital cities, those with more schooling, those ineligible for public dental care and those with dental insurance. Among these subgroups formed by social characteristics, the highest percentage who visited within the last 12 months was among the insured and conversely the lowest percentage was among the uninsured.

**Table 2. Percentage of dentate adults whose last dental visit was within the last 12 months or more than 5 years ago by social characteristics**

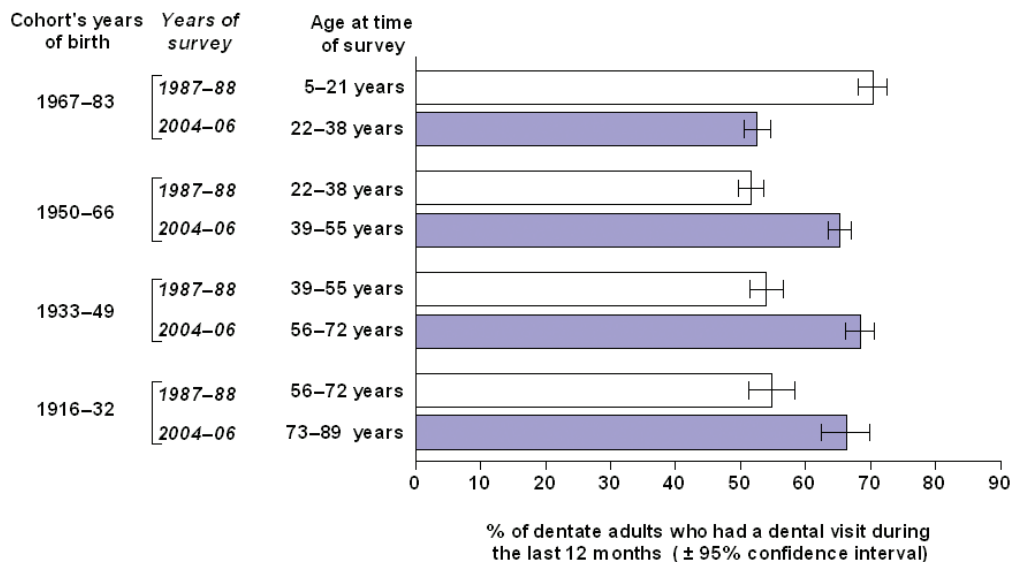
	Within last 12 months		More than 5 years ago	
	%	95% CI	%	95% CI
<b>Sex</b>				
Male	59.0	57.3–60.7	12.3	11.2–13.5
Female	65.1	63.7–66.5	6.8	6.0–7.6
<b>Residential location</b>				
Capital city	64.3	62.8–65.7	8.8	8.0–9.7
Other places	58.0	56.0–59.9	10.9	9.8–12.1
<b>Year level of schooling</b>				
Year 9 or less	58.8	55.3–62.2	13.3	11.2–15.6
Year 10 or more	62.5	61.2–63.7	9.1	8.4–9.8
<b>Eligibility for public dental care</b>				
Eligible	56.8	54.5–59.1	12.6	11.0–14.2
Ineligible	63.7	62.3–65.0	8.6	7.9–9.5
<b>Dental insurance</b>				
Insured	73.1	71.6–74.5	4.9	4.3–5.7
Uninsured	52.5	50.9–54.1	13.7	12.6–14.8

The percentage of dentate adults who last visited more than five years ago also varied by social characteristics. The percentage of dentate adults who last visited more than five years ago was higher among male than female adults, those living in other places than a capital city, those with less schooling, those eligible for public dental care and those uninsured. Among these subgroups formed by social characteristics, the highest percentage of those last visiting more than five years ago was among those with Year 9 or less schooling, while the lowest percentage was among those with private dental insurance. These subgroups of the Australian dentate adult population with an unfavourable length of time since their last visit included most of the disadvantaged groups identified in Australia's National Oral Health Plan,<sup>1</sup>



	15–24	25–34	35–44	45–54	55–64	65–74	75+	All ages
1987–88	53.2	51.0	55.0	52.7	55.6	54.0	54.1	53.3
2004–06	63.0	50.1	60.2	66.9	69.6	67.6	65.9	62.1

**Fig 1.** Age group analysis of trends in dental visits in the last 12 months among dentate Australians, 1987–88 to 2004–06.



Cohort	1916-32	1933-49	1950-66	1967-83
1987-88	54.8	54.0	51.6	70.4
2004-06	66.3	68.4	65.3	52.6

Fig 2. Birth cohort analysis in dental visits in the last 12 months among dentate Australians, 1987-88 to 2004-06.

and for whom there are proposed actions to narrow the inequalities in access to dental care.

### Age group analysis

Further analysis focuses only on the percentage of dentate adults who visited within the last 12 months. The trend over time in the percentage of dentate adults who visited within the last 12 months within each age group is presented in Fig 1. For each 10-year age group a pair of vertical bars is presented: the bar on the left represents NOHSA 1987-88 while the bar on the right represents NSAOH 2004-06. Each bar shows the 95 per cent confidence interval for the percentage of dentate adults visiting within the last 12 months. For all adults and most age groups the percentage visiting in the last 12 months significantly increased between the survey times. For 35-44 year olds the increase was of borderline significance, while there was virtually no change in the percentage of 25-34 year olds who visited within the last 12 months.

Two findings are most notable in this comparison. First, the increase in the percentage of the dentate adult population visiting within the last 12 months (53.3 to 62.1 per cent) indicates a substantial increase in effective demand for dental care. Much of this increase occurred in middle-aged and older-aged adults. These age groups are also undergoing an epidemiological transition away from tooth loss. This reflects substantial need for diagnostic, preventive and maintenance care in these age groups, as well as elective services. The increased percentage of dental adults effectively demanding dental care is one driver in the emerging challenge of sustaining an adequate supply of dental providers to meet the demands of the Australian population.

Second, the young adult age groups, 25-34 and to a lesser extent 35-44 year olds, are being left behind in this trend

over time. Young adults with competing commitments to houses, cars and dependent family members face substantial affordability barriers in visiting private practitioners. Young working families need attention in any policy focus on access to dental services.

### Birth cohort analysis

Cohorts of adults born across the same period of time are compared at the two survey times in Fig 2. The years of birth which defined each cohort were set to 17 years, so that this period coincides with the time interval between the two surveys. The figure has been arranged around four birth cohorts (1916-32, 1933-49, 1950-66 and 1967-83). For each cohort two horizontal bars are presented of the percentage of adults who visited within the last 12 months. The top bar represents the finding for each cohort from the NOHSA 1987-88, while the bottom bar represents the finding for each cohort from the NSAOH 2004-06. It follows from this arrangement that the age of the cohort at the earlier survey is 17 years younger than the age of the cohort at the later survey.

Two specific comparisons can be drawn out of the birth cohort analysis. Comparison within a birth cohort at the two survey times shows an ageing effect. In addition, an earlier finding can be directly compared with a later finding on adults of the same age between cohorts to reflect period and cohort changes.

The within birth cohort findings showed that for the three earlier birth cohorts, the percentage of dentate adults reporting visiting within the last 12 months had increased. However, among the most recent birth cohort, dentate adults born in 1967-83, there was a decrease in the percentage who visited within the last 12 months. The between cohort comparisons showed that among older adults, including 56-72 and 39-55 year olds, the next birth cohort or

generation has a higher percentage visiting in the last 12 months. However, for 22–38 year olds there has been no change in the percentage visiting within the last 12 months from the earlier to the later birth cohort or generation.

These findings reinforce the trends seen in the age group analysis. Among the most recent birth cohort of children and adolescents the percentage visiting in the last 12 months decreases as they 'age' into adulthood. A lower percentage of young adults have visited in the last 12 months and this remained constant across two successive birth cohorts or generations. Earlier birth cohorts showed both an increasing percentage visiting within the last 12 months as the cohort aged and across more recent birth cohorts or generations of the same age.

## DISCUSSION

This report has focused on only one indicator of access to dental care; time since last dental visit. However, this single indicator reflects many of the wider issues of access to dental care and changes in dental visiting over time.

Only a little more than half the Australian dentate adult population has visited a dental provider within the last 12 months. This is one aspect of a bigger picture that indicates that the visiting pattern of adults can be contrasted by a 'glass half-full' versus 'glass half-empty' perspective. About half of all adults have a favourable visiting pattern. This is a positive achievement, but it needs to be built upon. The empty half of glass needs to be filled. The lower percentage of adults outside capital cities, with less schooling, eligible for public dental care and without private dental insurance who visited in the last 12 months gives direction as to who in the population have a less favourable visiting pattern. However, there is also a definite pattern from the age group and birth cohort comparisons. Young adults have a lower percentage with a favourable visiting pattern. Although young adults may share some of the social characteristics of others at a disadvantage in visiting, such as a lower percentage with private dental insurance, most don't face other barriers, such as limited schooling or eligibility for public dental care. Instead, they face affordability issues in accessing private dental care when disposable income is heavily committed to a number of essentials like mortgages and child rearing.

Another dominant issue from this report is the increasing percentage of adults, and particularly middle-aged and older-aged adults who are visiting in the last 12 months. Coupled with demographic and epidemiologic transitions, this is driving the increased demand for dental care, especially from middle-aged and older adults. This triumvirate of population growth, increased tooth retention and rising expectations about dental care is creating the requirement for an expanded labour force and challenging policy on how that labour force is organized and delivers dental care.

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