

# Dental visiting and use of dental services among the Australian older population

Australian Research Centre for Population Oral Health, The University of Adelaide, South Australia.

## INTRODUCTION

The Australian population is ageing. It is projected that the number of Australian older people will double between 1997 and 2021.<sup>1</sup> Most older people are living independently in the community and, if they are to maintain their oral health, they require access to affordable and timely dental care. Although many older Australians are eligible for public dental care, they face barriers, such as long waiting times before they can access care. The Australian older population is in great need for dental care.<sup>2</sup> Self-reported dental visiting patterns and use of dental services among the Australian older population are important in understanding current access and future requirements for dental care.

This article aims to report on dental attendance within the preceding 12 months, usual dental attendance for a check-up, extractions received in the previous 12 months and financial barriers to dental care among the Australian population aged 60+ years from 2007 to 2008.

## METHODS

Data presented in this report were sourced from the National Dental Telephone Interview Survey (NDTIS) 2008. A two-stage stratified sampling design was adopted to select a random sample of residents aged 5 years and over from the Australian population. The sampling frame used to select the sample was the 'electronic white pages' (EWP). To be able to access the latest version of the EWP, an initial sample of people aged 18 years and over was selected from the Commonwealth electoral roll by the Australian Electoral Commission (AEC). The AEC sample of names and addresses was then matched to the EWP by SENSIS Business Information Services using their matching product MacroMatch®. Records from the AEC sample that matched to the EWP by surname and address and returned a telephone number (either

landline or mobile number) formed the basis of the 2008 NDTIS sampling frame. Households listed on this frame were stratified by state and region (metropolitan/non-metropolitan) and a systematic sample of households was selected within each stratum. Once telephone contact was made with a selected household, one person aged 5 years or older was randomly selected from the household based on each resident's birth date. The selected person was then asked to participate in the survey.

Survey participants were asked a range of questions relating to their oral health, access to dental care, dental treatment received and affordability of dental care. A total of 7587 people aged 5+ years were interviewed. Of these, 2486 were 60+ years old and are the subjects of this report. Data were weighted to account for the different probabilities of selection inherent in the survey design, and to ensure that survey estimates reflected the 2007 estimated residential population age/gender distribution.

## RESULTS

### Dental attendance within the preceding 12 months

Some 52.1% of people aged 60+ made a dental visit in the last 12 months (Table 1). The percentage who visited within the last 12 months was highest among 60–69 year olds and decreased across older age groups. The percentage who visited within the last 12 months was markedly higher among dentate older people (62.3%) than their edentulous peers (14.5%). The same pattern was shown across all the age subgroups. The percentage of dentate older people who visited within the last 12 months was higher among females than males, those in a capital city than other places, those with more schooling, those ineligible for public dental care and those who were insured. Among these subgroups by social characteristics, the highest percentage of those visiting within the last 12 months was among those with private dental insurance (72.6%),

**Table 1. Percentage of people visiting a dentist within the last 12 months in the Australian older population**

		Australian older population (years)			
		All	60–69	70–79	80+
<b>All people aged 60+ years</b>	% of people	52.1	56.5	49.3	45.5
	95% CI	49.6–54.6	53.1–59.8	44.9–53.7	39.3–51.8
<b>Oral status<sup>(a)</sup></b>					
Dentate	% of people	62.3	62.8	61.1	63.1
	95% CI	59.5–65.0	59.1–66.2	55.9–66.1	55.3–70.3
Edentulous	% of people	14.5	12.9	17.9	10.8
	95% CI	11.1–18.6	7.5–21.3	12.5–24.8	5.9–19.0
<b>Gender<sup>(b)</sup></b>					
Male	% of people	56.4	56.7	52.1	65.4
	95% CI	52.5–60.3	51.5–61.9	44.9–59.1	54.6–74.8
Female	% of people	67.9	69.0	69.7	61.5
	95% CI	64.1–71.6	64.1–73.4	62.3–76.2	50.3–71.5
<b>Residential location<sup>(b)</sup></b>					
Capital city	% of people	65.5	65.5	65.9	64.7
	95% CI	61.9–69.0	60.7–70.0	59.0–72.3	54.6–73.6
Other places	% of people	57.1	58.5	53.1	60.4
	95% CI	52.9–61.3	52.9–63.8	45.5–60.6	47.5–72.1
<b>Year level of schooling<sup>(b)</sup></b>					
Year 9 or less	% of people	48.6	49.1	47.0	51.0
	95% CI	43.0–54.3	40.9–57.4	37.9–56.2	37.6–64.2
Year 10 or more	% of people	67.0	66.2	67.7	68.8
	95% CI	63.9–70.0	62.3–70.0	61.7–73.3	59.1–77.1
<b>Eligibility for public dental care<sup>(b)</sup></b>					
Eligible	% of people	59.4	57.6	59.4	62.9
	95% CI	55.9–62.7	52.6–62.6	53.8–64.9	54.4–70.6
Ineligible	% of people	68.7	68.1	75.2	65.4
	95% CI	64.1–73.1	62.9–72.8	61.8–85.0	43.3–82.4
<b>Dental insurance<sup>(b)</sup></b>					
Insured	% of people	72.6	74.4	71.8	63.4
	95% CI	69.0–76.0	70.1–78.3	64.1–78.4	49.7–75.2
Uninsured	% of people	53.3	49.4	53.0	63.0
	95% CI	49.3–57.3	43.8–55.1	46.1–59.9	53.4–71.7

<sup>(a)</sup>All people aged 60+ years.

<sup>(b)</sup>Dentate people aged 60+ years.

while the lowest percentage was among those with Year 9 or less schooling (48.6%).

### Usual dental attendance for a check-up

Some 41.7% of the older people aged 60+ years usually visit a dentist for a check-up (Table 2). The percentage of older people usually visiting for a check-up was significantly higher among 60–69 year olds (46.6%) than 80+ year olds (30.4%), while 40.4% of older people aged 70–79 reported that they usually visited for a check-up. The percentage usually visiting for a check-up varied by oral status. The percentage usually visiting for a check-up was markedly higher among dentate older people (50.0%) than their edentulous peers (8.0%). The same pattern was shown across all the age subgroups.

For dentate people aged 60+ the percentage usually visiting for a check-up varied between the age subgroups defined by socio-demographic characteristics. The greatest variation in the percentages usually visiting for a check-up among dentate people aged 60+ was between those insured and uninsured (65.7% compared with 36.1%). The same pattern was shown across all

the age subgroups. The percentage of older people usually visiting a dentist for a check-up was higher among females than males (54.6% compared with 45.1%), those in capital cities than other places (53.9% compared with 43.6%), those with Year 10 or more schooling than those with Year 9 or less schooling (55.1% compared with 34.5%), and those ineligible rather than eligible for public dental care (62.4% compared with 41.5%). Among these subgroups by social characteristics, the highest percentage of those usually visiting a dentist for a check-up was among those with private dental insurance (65.7%), while the lowest percentage was among those with Year 9 or less schooling (34.5%).

### Extractions received in the previous 12 months

Table 3 presents the percentage of dentate people having one or more extractions in the last 12 months in the Australian older population. Some 17.5% of dentate people aged 60+ years had one or more extractions in the last 12 months. There was little variation in the percentage of dentate older people having one or more extractions across the age

**Table 2. Percentage of people who usually visit a dentist for a check-up in the Australian older population**

		Australian older population (years)			
		All	60–69	70–79	80+
All people aged 60+ years	% of people	41.7	46.6	40.4	30.4
	95% CI	39.3–44.2	43.3–50.0	36.0–44.8	25.1–36.3
<b>Oral status<sup>(a)</sup></b>					
Dentate	% of people	50.0	52.0	50.6	41.3
	95% CI	47.2–52.8	48.4–55.6	45.3–55.8	34.1–49.0
Edentulous	% of people	8.0	5.6	9.8	7.8
	95% CI	5.6–11.4	2.9–10.7	6.0–15.6	3.5–16.3
<b>Gender<sup>(b)</sup></b>					
Male	% of people	45.1	45.9	45.4	41.2
	95% CI	41.3–49.0	40.9–51.0	38.5–52.5	31.1–52.2
Female	% of people	54.6	58.3	55.4	41.4
	95% CI	50.6–58.5	53.3–63.2	47.7–62.8	31.6–52.0
<b>Residential location<sup>(b)</sup></b>					
Capital city	% of people	53.9	56.5	52.9	47.0
	95% CI	50.2–57.6	51.7–61.1	45.8–59.9	37.6–56.7
Other places	% of people	43.6	45.0	46.7	31.8
	95% CI	39.5–47.8	39.6–50.4	39.3–54.3	21.4–44.4
<b>Year level of schooling<sup>(b)</sup></b>					
Year 9 or less	% of people	34.5	36.1	37.0	25.8
	95% CI	29.5–39.9	28.8–44.2	28.7–46.2	16.5–37.9
Year 10 or more	% of people	55.1	55.9	56.8	47.9
	95% CI	51.9–58.3	51.9–59.9	50.4–62.9	38.6–57.4
<b>Eligibility for public dental care<sup>(b)</sup></b>					
Eligible	% of people	41.5	41.5	46.0	30.5
	95% CI	37.9–45.1	36.5–46.7	40.0–52.0	22.9–39.2
Ineligible	% of people	62.4	60.9	67.8	64.8
	95% CI	58.2–66.4	56.0–65.6	57.3–76.8	51.8–75.9
<b>Dental insurance<sup>(b)</sup></b>					
Insured	% of people	65.7	66.2	67.1	57.4
	95% CI	61.9–69.3	61.7–70.5	59.3–74.1	44.0–69.9
Uninsured	% of people	36.1	35.7	37.7	34.6
	95% CI	32.4–40.0	30.5–41.2	31.2–44.7	26.3–43.9

<sup>(a)</sup>All people aged 60+ years.<sup>(b)</sup>Dentate people aged 60+ years.

subgroups, ranging between 16.2% and 19.3%. The percentage of dentate people aged 60+ years having one or more extractions in the last 12 months was higher among those living in other places than in capital cities, those eligible for public dental care and those who were uninsured. The same pattern was shown in the subgroups aged 60–69, 70–79 and 80+ years. However, statistical significance was only shown in the 60–69 years age group. There was little variation in the percentages of males and females receiving extractions. The percentages were also similar in those with Year 10 or more schooling and Year 9 or less schooling. Among these subgroups by social characteristics, the highest percentage of those receiving one or more extractions within the last 12 months was among those living in other places than capital cities (24.2%), while the lowest percentage was among those ineligible for public dental care (12.6%).

### Financial barriers to dental care

Some 22.2% of people aged 60+ would have difficulty paying a \$100 dental bill (Table 4). The percentages

were similar across all the age subgroups. The percentage with difficulty paying a \$100 dental bill was higher among edentulous people aged 60+ years (31.1%) than their dentate peers (19.9%). A difference in the percentage with difficulty paying a \$100 dental bill of almost two-fold was found for edentulous people compared to their dentate peers aged 60–69 years (42.6% compared with 19.3%). There was around a three-fold difference in the percentage who would have difficulty paying a \$100 dental bill between dentate people aged 60+ who were eligible for public dental care (27.3%) and those who were not eligible (8.9%). The relative difference was largest in 70–79 year olds (24.9% compared with 1.4%), followed by the 80+ age group (18.9% compared with 1.9%) and 60–69 year olds (33.1% compared with 5.5%). There was a greater than two-fold relative difference in the percentage with difficulty paying a \$100 dental bill between those without dental insurance (28.4%) and those with dental insurance (10.1%). The difference was greatest in 60–69 year olds (33.1% compared with 5.5%). There was around a two-fold relative difference in the percentage with difficulty paying a \$100 dental bill

**Table 3. Percentage of dentate people having one or more extractions in the last 12 months in the Australian older population**

		Australian older population (years)			
		All	60–69	70–79	80+
<b>All dentate people aged 60+ years</b>	% of people	17.5	16.2	19.3	18.3
	95% CI	15.0–20.2	13.2–19.8	14.7–24.8	11.6–27.5
<b>Gender</b>					
Male	% of people	20.5	20.4	21.3	19.3
	95% CI	16.8–24.8	15.6–26.2	14.9–29.5	10.6–32.5
Female	% of people	15.1	12.7	17.8	17.5
	95% CI	11.9–18.9	9.2–17.4	12.0–25.8	8.8–31.6
<b>Residential location</b>					
Capital city	% of people	13.8	11.5	17.2	14.7
	95% CI	11.0–17.1	8.4–15.7	11.8–24.3	7.9–25.6
Other places	% of people	24.2	24.5	23.5	24.8
	95% CI	19.7–29.5	18.7–31.3	16.2–32.9	12.5–43.2
<b>Year level of schooling</b>					
Year 9 or less	% of people	20.1	18.4	21.8	20.3
	95% CI	14.5–27.0	10.9–29.2	13.8–32.8	8.2–42.0
Year 10 or more	% of people	16.9	15.9	18.5	17.8
	95% CI	14.2–20.0	12.7–19.7	13.2–25.1	10.5–28.6
<b>Eligibility for public dental care</b>					
Eligible	% of people	21.6	22.5	21.4	20.3
	95% CI	18.0–25.8	17.3–28.7	16.1–27.9	11.4–33.4
Ineligible	% of people	12.6	11.9	13.5	15.0
	95% CI	9.5–16.5	8.5–16.3	6.3–26.7	7.2–28.6
<b>Dental insurance</b>					
Insured	% of people	12.8	12.1	12.9	17.9
	95% CI	10.0–16.1	9.0–16.1	7.9–20.5	8.4–34.0
Uninsured	% of people	23.2	23.6	26.0	18.4
	95% CI	19.0–27.9	17.7–30.7	18.9–34.7	10.5–30.4

**Table 4. Percentage of people who would have difficulty paying a \$100 dental bill in the Australian older population**

		Australian older population (years)			
		All	60–69	70–79	80+
<b>All people aged 60+ years</b>	% of people	22.2	22.2	22.6	21.6
	95% CI	20.1–24.5	19.4–25.4	18.8–27.0	16.7–27.4
<b>Oral status<sup>(a)</sup></b>					
Dentate	% of people	19.9	19.3	21.7	18.2
	95% CI	17.5–22.4	16.4–22.6	17.1–27.1	12.8–25.2
Edentulous	% of people	31.1	42.6	25.1	28.2
	95% CI	26.2–36.5	33.4–52.4	18.7–32.8	19.3–39.2
<b>Gender<sup>(b)</sup></b>					
Male	% of people	18.3	18.8	17.6	17.8
	95% CI	15.2–21.9	14.6–23.8	12.7–24.0	10.4–28.8
Female	% of people	21.4	19.8	25.5	18.5
	95% CI	18.0–25.2	16.0–24.2	18.4–34.2	11.6–28.3
<b>Residential location<sup>(b)</sup></b>					
Capital city	% of people	18.3	17.0	20.5	18.1
	95% CI	15.3–21.7	13.6–21.0	14.4–28.4	11.6–27.2
Other places	% of people	22.5	22.9	23.6	18.4
	95% CI	18.9–26.5	18.1–28.6	17.6–31.0	10.3–30.6
<b>Year level of schooling<sup>(b)</sup></b>					
Year 9 or less	% of people	31.3	40.4	28.2	17.8
	95% CI	26.1–37.0	32.2–49.1	20.3–37.8	9.8–30.1
Year 10 or more	% of people	15.9	14.0	18.7	18.6
	95% CI	13.4–18.8	11.3–17.2	13.3–25.6	12.0–27.7
<b>Eligibility for public dental care<sup>(b)</sup></b>					
Eligible	% of people	27.3	33.1	24.9	18.9
	95% CI	23.9–31.0	28.1–38.5	19.4–31.3	12.3–28.0
Ineligible	% of people	8.9	5.5	1.4	1.9
	95% CI	6.6–11.9	3.7–8.2	0.7–2.8	1.0–3.5
<b>Dental insurance<sup>(b)</sup></b>					
Insured	% of people	10.1	7.2	14.8	15.4
	95% CI	7.4–13.7	5.1–10.0	8.1–25.6	7.6–29.0
Uninsured	% of people	28.4	33.2	26.8	19.3
	95% CI	24.9–32.2	28.0–38.9	21.1–33.5	12.9–28.1

<sup>(a)</sup>All people aged 60+ years.<sup>(b)</sup>Dentate people aged 60+ years.

between those with Year 9 or less schooling (31.3%) and those with Year 10 or more schooling (15.9%). The difference was greatest in 60–69 year olds (40.4% compared with 14.0%).

## DISCUSSION

In this report, a picture of the older population's access to dental services was gained from a number of indicators – visiting a dentist within the last 12 months, usually visiting a dentist for a check-up, having one or more extractions in the last 12 months and having difficulty paying a \$100 dental bill.

Socio-demographic characteristics and younger age among older people were positively associated with visiting within last 12 months and usually visiting for a check-up. The lower percentage of male older adults, those with less schooling, persons living outside capital cities, people eligible for public dental care and uninsured persons who visited in the last 12 months and who usually visit for a check-up indicates those who have a less favourable dental visiting pattern. Those living in non-capital cities, those eligible for public dental care and the uninsured are more likely of having one or more extractions in the last 12 months. Edentulous people aged 60+ years are more likely to have difficulty paying a \$100 dental bill than their dentate peers. An explanation for this phenomenon is that extraction tends to reflect a service that is providing relief of pain at the lowest possible cost. When older people who usually seek extraction to solve their dental problems become edentulous, they may face financial barriers to receive prosthodontic treatment which is usually more expensive than general treatments (i.e., fillings and scaling). Among dentate older people, people eligible for public dental care, those without dental insurance and with less schooling are more likely to have difficulty paying a \$100 dental bill, which indicates such disadvantaged older people are more likely to face a financial barrier if they have a need for dental care.

This study supports the need to improve older people's access to affordable, timely and preventively-focused dental care, which was proposed in Australia's National Oral Health Plan 2004–2013.<sup>3</sup> There is an urgent need to develop a favourable policy with a geriatric focus and develop the capacity of the oral health workforce to deliver appropriate dental care, e.g., a multidisciplinary team approach is recommended, involving support by oral health professionals with medical and allied health professionals in timely oral health assessment, dental referral and maintenance of daily oral hygiene.

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*Address for correspondence:*

*Dr Haiping Tan  
Australian Research Centre for Population Oral Health  
School of Dentistry  
The University of Adelaide  
Adelaide SA 5005  
Email: haiping.tan@adelaide.edu.au*