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The National Survey of Adult Oral Health 2004–06

Queensland

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Abbreviations

AAP	American Academy of Periodontology
AHMAC	Australian Health Ministers' Advisory Council
AIHW	Australian Institute of Health and Welfare
ARCPOH	Australian Research Centre for Population Oral Health
CAL	clinical attachment loss
CATI	computer-assisted telephone interview
CDC	US Centers for Disease Control and Prevention
CEJ	cemento-enamel junction
DMFT	number of decayed, missing and filled permanent teeth
DSRU	Dental Statistics and Research Unit
IRSAD	Index of Relative Socioeconomic Advantage/Disadvantage
NCHS	US National Center for Health Statistics
NHANES	US National Health and Nutrition Examination Survey
NHMRC	National Health and Medical Research Council
NOHSA	National Oral Health Survey of Australia
NSAOH	National Survey of Adult Oral Health
SEIFA	Socioeconomic Indices for Areas

Place abbreviations

ACT	Australian Capital Territory
NSW	New South Wales
NT	Northern Territory
Qld	Queensland
SA	South Australia
Tas	Tasmania
UK	United Kingdom
US	United States
Vic	Victoria
WA	Western Australia

Symbols

\$	Australian dollars
%	per cent
..	not applicable
–	nil
>	greater than
<	less than
≥	greater than or equal to
≤	less than or equal to
<0	estimate is less than zero

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Overview of results

This report describes levels of oral health in the adult population of Queensland at the beginning of the twenty-first century. The findings are from the 2004–06 National Survey of Adult Oral Health (NSAOH). In Queensland, 2,052 people were interviewed and 824 people were dentally examined for the survey. This report presents percentages and means for 30 oral health indicators in tables that compare three age groups and classify people according to five sociodemographic characteristics: sex, residential locality, socioeconomic status of residential postcode, government health card status and dental insurance status.

Oral health status

- 5.8% of people had no natural teeth and among dentate people, an average of 4.3 teeth per person were missing. Higher levels of tooth loss were associated with low socioeconomic status, having a government health card and being uninsured.
- 27.6% of people had untreated dental decay and an average of 13.1 teeth per person were decayed, missing or filled. There was relatively little variation among sociodemographic groups in indicators of dental decay experience.
- 24.7% of people had inflamed gums and 24.1% had moderate or severe gum disease. Two indicators of gum disease occurred more frequently outside Brisbane than in the capital city.

Oral health care

- 58.5% of people had visited a dentist within the preceding 12 months, and 50.5% said they usually did so. These and two other measures of dental attendance varied according to all five sociodemographic characteristics.
- 73.5% of people had a dentist that they usually attended, although 31.5% said that they avoided or delayed dental care due to its cost. Barriers to dental care were most strongly associated with all five sociodemographic characteristics.

Oral health perceptions

- 15.1% of people said they had avoided some foods due to dental problems, and 13.2% had experienced toothache, in the preceding 12 months. Females tended to report poorer oral health perceptions than males and the perceptions were also associated with having a government health card and being insured.
- 34.9% of people felt they needed an extraction or filling, although only 7.5% said they needed dentures. Perceived treatment needs were more likely to be reported by the uninsured than the insured.

Age-standardised analysis revealed that government health cardholders had poorer outcomes for 13 of the 29 indicators reported, while the uninsured had poorer outcomes for 21 of the 30 indicators.

1 Introduction

This report presents findings from the Queensland component of the 2004–06 National Survey of Adult Oral Health (NSAOH). Information was collected using interviews and standardised dental examinations that were conducted among a random sample of Queensland residents aged 15 years or more. Three major themes are reported in chapters describing oral health status, oral health care and perceptions of oral health. Statistics summarising those themes are tabulated for the Queensland adult population and for three age groups that are further classified according to: sex, residential locality, socioeconomic status of the area in which they live, government health cardholder status and dental insurance.

The 2004–06 NSAOH took place 17 years after the first oral examination survey of Australians conducted in the six states and the Australian Capital Territory (Barnard 1993). State/territory reports from that 1987–88 National Oral Health Survey of Australia (NOHSA) highlighted variations among age groups, between the sexes and between people living in or outside capital cities. The major findings reported from the survey were:

- children’s dental decay rates were low by historical standards and when compared internationally
- nearly one-half (48%) of adults had made a dental visit within the preceding year, the majority of them to a private dental practice (88%)
- however, 44% of adults were found to need one or more dental fillings
- the percentage of Australians with complete tooth loss had reduced compared with earlier interview surveys, although 50% of people aged 65 years or more had no natural teeth and
- one of the four national oral health targets had been achieved, and it was expected that the remaining three targets would be achieved by 2000.

However, the first survey did not collect information about government health cardholder status or socioeconomic status, and results were not contrasted between insured and uninsured.

In the 17-year period since the NOHSA, there has been substantial growth in public sector dental care and dental insurance. Increasingly, national and state/territory health goals call for reductions in socioeconomic inequalities in health, including oral health. For those reasons, this report includes a focus on the relationship between oral health and indicators of socioeconomic status and access to dental care, as well as the traditional demographic markers of age, sex and residential location.

Purpose and organisation of this report

The purpose of this report is to provide a descriptive ‘snapshot’ of oral health in the adult population of Queensland. The findings are intended to provide up-to-date evidence that can contribute to the development of oral health policies and programs in Queensland.

This introductory chapter outlines the motives for undertaking the survey. Chapter 2 reviews the survey’s methods and describes the population distribution of sociodemographic and dental access characteristics presented in later tables. Statistical findings regarding oral health status are tabulated and described in Chapter 3, followed by statistical findings regarding oral health care (Chapter 4) and perceptions of oral health (Chapter 5). The Appendix contains additional tables of oral health statistics for conventional 10-year age groups. These are narrower than the age ranges reported in the chapters, and are presented to permit comparisons with surveys conducted at other places and other times.

The national report of the survey’s findings (Slade et al. 2007) provides additional details about the survey, including participation rates and analysis of potential biases due to non-participation. The national report also presents qualitative findings from ‘oral histories’ conducted with a small number of survey participants to document historical influences on the nation’s oral health. Further appendix material is available at:

<<http://www.arcpho.adelaide.edu.au/project/distribution/NSAOH.html>>.

Background to the survey

Up-to-date information about population oral health is important because oral diseases have broad implications for the health of the public. Dental problems are ranked among the most frequently reported illness episodes by Australians (AIHW 2000), and provision of dental care accounts for 6.6% of recurrent health expenditure in 2005–06 (AIHW 2007). In the United States the Surgeon General characterised oral disease as a ‘silent epidemic’ (Surgeon General 2000).

In the 17 years following the 1987–88 NOHSA, no state-wide oral examination surveys of adults have been conducted. Instead, published oral examination surveys were restricted to special groups of the adult population and often they were conducted within selected locations in states. They included studies of oral health in:

- military recruits (Dawson & Smales 1994; Hopcraft & Morgan 2003a,b, 2005, 2006; Morgan et al. 1992)
- adults in Melbourne (Wright et al. 1994)
- community-dwelling elderly people (Bergman et al. 1991; Chalmers, Carter & Spencer 2002; Slade et al. 1993; Slade & Spencer 1995, 1997; Thomson et al. 1995)
- elderly people living in nursing homes or hostels (Chalmers, Carter, Fuss et al. 2002; Chalmers, Hodge et al. 2002; Chalmers et al. 2005; Saub & Evans 2001)
- Aboriginals and Torres Strait Islanders (Endean et al. 2004; Smith et al. 2007)
- immigrants (Marino et al. 2001, 2007) or refugees (Kingsford Smith & Szuster 2000)
- prisoners (Osborn et al. 2003)
- patients receiving dental care in public dental services (Brennan et al. 2000, 2001, 2007; Brennan & Spencer 2004) and
- patients with selected medical conditions (Coates et al. 1996, 2000).

By the late 1990s, several collaborative efforts among federal and state/territory stakeholders attempted to secure support for a second national oral health survey, although none were funded. Renewed impetus for a national survey began with the work of the National Advisory Committee on Oral Health (AHMAC 2001). The committee formulated a National Oral Health Plan for the period 2004–13 comprising seven action areas:

- promotion of oral health across the population
- children and adolescents
- older people
- people with low income and social disadvantage
- people with special needs
- Aboriginal and Torres Strait Islander people and
- workforce development.

One of four short-term goals listed for the plan's first action area was the conduct of a national survey of adult oral health. Fulfilment of that goal became possible in 2003 when researchers at the Australian Research Centre for Population Oral Health (ARCPOH) in The University of Adelaide sought project grant funding from the National Health and Medical Research Council (NHMRC). The proposal was for funding to support a collaborative project that pooled resources already committed or promised from the following sources: funding from the Australian Government Department of Health and Ageing to the Dental Statistics and Research Unit (DSRU) within ARCPOH to undertake a telephone interview survey; commitment of staff from oral health sections within state and territory health departments to conduct oral epidemiological examinations; and core funding from the Australian Institute of Health and Welfare (AIHW) to DSRU. Following peer review, the NHMRC awarded a project grant to ARCPOH in November 2003.

Aspects of oral health and dental care relevant to the National Oral Health Plan

The National Oral Health Plan outlined nine population indicators that were informative in developing the plan and that are cited as key performance indicators to evaluate the outcomes of the plan. This survey reports findings that relate to six of those key performance indicators:

- The percentage of the dentate population reporting a social impact (for example toothache, difficulty chewing, concerned about appearance) because of problems with teeth, mouth or gums in the last 12 months, by age group, living circumstance, government health cardholder status, Indigenous identity and special needs.
- The percentage of the population with untreated decay, by age group, living circumstance, government health cardholder status and Indigenous identity.
- The proportion of the dentate population with a maximum periodontal pocketing of 3.5 mm and 5.5 mm, by age group.
- The mean number of missing teeth and proportion of existing teeth with untreated decay, by age group, living circumstance, government health cardholder status and card status, and Indigenous identity.
- The percentage of the dentate population who visited a dental practitioner in the last 2 years, by age group, living circumstance, government health cardholder status and Indigenous identity.
- The percentage of the dentate population whose reason for visiting a dental practitioner in the last 12 months was for a check-up, by age group, living circumstance, government health cardholder status and Indigenous identity.

2 Methods

Full details of the survey's methods have been described in Chapter 2 of the national report (Slade et al. 2007). The following summary highlights the main methodological features of the survey.

Study population and sampling

A three-stage, stratified clustered sampling design was used to select people from the target population of Australian residents aged 15 years or more:

- Postcodes were sampled at random from capital city and non-capital city strata in six states and the Northern Territory, and from a single stratum in the Australian Capital Territory. Postcodes represented the geographic clustering in the design and were selected with probability proportional to size, where size was defined as the number of households listed in the 'electronic white pages' in each postcode.
- A systematic sample of households listed in the 'electronic white pages' was selected for each sampled postcode. Thirty households per metropolitan stratum and 40 households per ex-metropolitan stratum were selected.
- One person aged 15 years or more was randomly selected per household. In households with only one person aged 15 years or more, that person was selected. In other households telephone interviewers asked for the name of the person aged ≥ 15 years who most recently had had a birthday and the name of the person aged ≥ 15 years who would next have a birthday. A computer algorithm then selected one of those two people at random.

Sampled postcodes

In Queensland the following postcodes were sampled: 4005, 4012, 4018, 4022, 4034, 4037, 4053, 4059, 4066, 4069, 4074, 4078, 4105, 4111, 4115, 4121, 4122, 4127, 4151, 4154, 4161, 4165, 4173, 4207, 4211, 4214, 4216, 4218, 4221, 4270, 4300, 4305, 4350, 4370, 4472, 4500, 4504, 4506, 4510, 4551, 4557, 4563, 4570, 4605, 4610, 4655, 4670, 4700, 4703, 4737, 4740, 4810, 4814, 4820, 4869, 4871, 4883.

Computer-assisted telephone interview

Self-reported information about oral health and characteristics associated with it was obtained through telephone interviews. Interviewers read questions from a computer screen and recorded answers directly onto the computer. They were conducted from a dedicated computer-assisted telephone interview (CATI) suite at University of Adelaide research offices. The methods were based on those advocated by Dillman (2000), including the mailing of a letter to households prior to telephoning, a protocol for contacting each household and standardised procedures for asking questions and recording answers. Interviews were conducted by 29 interviewers, each of whom was trained in the survey methods. Every effort was made to interview the target person although, in certain circumstances, the questions were answered by another adult in the form of a proxy interview.

The interview consisted of 79 questions, several with multiple response categories. A copy of the questions used is included in an Appendix available online:

<<http://www.arcpoh.adelaide.edu.au/project/distribution/NSAOH.html>>.

Oral epidemiological examination

Information about clinical oral status was collected during standardised dental examinations conducted by dentists who undertook training in the survey procedures. Examinations were limited to people who reported having some or all of their own natural teeth at the time of the interview. Examining dentists followed a standardised protocol to record levels of tooth loss, dental decay experience, tooth wear and – for subjects with no medical contraindications to periodontal probing – signs of gum disease. During data collection, replicate examinations were conducted for approximately five study participants per examiner to evaluate the consistency of their findings when judged against the principal survey examiner.

There were 30 examiners nationwide (Table 1). Prior to their work on the survey, they undertook a 2-day training and calibration session at The University of Adelaide. Separate training sessions were held for the examination teams from each state and territory. Prior to the scheduled training session, each examiner was sent a 50-page manual and a DVD detailing the survey protocol, including the criteria and coding for the examination.

Table 1: Distribution of examiners and examinations among states and territories

State	No. of examiners	No. of people examined	No. of examinations per examiner		
			Minimum	Maximum	Mean
NSW	11	1,113	32	164	101
Vic	3	1,181	267	585	394
Qld	3	824	217	305	275
SA	2	629	241	388	315
WA	3	470	134	196	157
Tas	3	385	49	186	128
ACT	2	386	125	261	193
NT	3	517	154	203	172
All states	30	5,505	32	585	184

Scope of examination

Survey participants were examined in a supine position in standard dental chairs with illumination provided by the chair's overhead dental light. Examiners used an intra-oral mirror that additionally had its own battery-powered light source. A periodontal probe with 2-mm markings was used to record distances, for example when assessing periodontal destruction (described further below); however, sharp explorers were not used and no radiographs were taken. Full details of the examination protocol are provided online:

<<http://www.arcpoh.adelaide.edu.au/project/distribution/NSAOH.html>>.

The following overview summarises criteria used to assess the main oral health variables reported in this volume.

Tooth loss

For people aged less than 45 years, examiners distinguished between missing teeth that had been extracted due to decay or periodontal disease and teeth that were absent for any other reason (that is, congenitally missing; unerupted; or extracted for orthodontics, trauma or impaction). For people aged 45 years or more, no such distinction was made, so that an extracted or otherwise absent tooth was recorded as missing. Dental implants, root fragments and deciduous teeth were coded separately and not counted as missing or absent teeth.

Replacement teeth

All lost teeth were further classified as replaced or not replaced by a fixed bridge or a removable denture that was worn to the examination.

Decay experience of coronal tooth surfaces

All teeth present were subdivided into five tooth surfaces: mesial, buccal, distal, lingual, and either occlusal (for premolars or molars) or incisal (for incisors and canines). Each coronal surface was assessed and categorised using visual criteria (no explorer was used) and one of the following codes was assigned:

- decay: cavitation of enamel or dentinal involvement or both are present
- recurrent caries: visible caries that is contiguous with a restoration
- filled unsatisfactorily: a filling placed for any reason in a surface that requires replacement but that has none of the above conditions
- filling to treat decay: a filling placed to treat decay in a surface that had none of the above conditions
- filling placed for reasons other than decay: in a surface that has none of the above conditions (incisors and canines only)
- fissure sealant: where none of the above conditions were found
- sound: when none of the above conditions was found.

Decay experience of tooth root surfaces

All teeth present were subdivided into four root surfaces: medial, buccal, distal and lingual. Each root surface was assessed visually and, if necessary, using a ball-ended periodontal probe. One of the following codes was assigned:

- decay: a discrete, well-defined or discoloured lesion on the root surface that is soft to exploration using the periodontal probe
- recurrent caries: detectable caries that is contiguous with a restoration
- filled unsatisfactorily: a filling placed for any reason in a surface that has unacceptable defects but meeting none of the above conditions
- filled root surface: one or more permanent restorations placed for any reason but none of the above conditions
- wear of 2 mm or more: recorded only on buccal surfaces with none of the above conditions
- sound root surface: when none of the above conditions was found
- no visible root surface.

Periodontal tissue destruction

The assessment of periodontal tissue destruction was based on methods used in the US National Health and Nutrition Examination Survey (NHANES 2005). Assessments were made of probing pocket depth and gingival recession, both recorded in millimetres using a periodontal probe that had 2-mm markings. Measurements were made at the mesio-buccal, mid-buccal and disto-buccal aspects of all teeth present, except for third molars. All fractional millimetre measurements were rounded down to the lowest whole millimetre before calling the number. For recession, the cemento-enamel junction (CEJ) was identified or its position was estimated (for example, if a filling obscured its position), and the distance from the CEJ to the free gingival margin was recorded in millimetres. When the CEJ was subgingival, the number called was negative; otherwise it was positive. For probing pocket depth, the distance from the free gingival margin to the bottom of the periodontal crevice/pocket was called.

Examiners did not make a direct measurement of clinical attachment loss; instead, it was computed during data analysis.

Gingival inflammation around six index teeth

The Loe and Silness (1963) gingival index was used to assess inflammation of the marginal gingival tissues around six index teeth (if present) – the most anterior molar in each dental quadrant (up to four teeth), the right maxillary central incisor and the left mandibular central incisor. Pressure was applied to the free gingival margin on the buccal aspect of the tooth by swiping with the side of a periodontal probe that was held at approximately 90 degrees to the long axis of the tooth. One of the following codes was assigned:

- severe inflammation: marked redness and oedema, ulceration or tendency to spontaneous bleeding
- moderate inflammation: redness, oedema, glazing or bleeding after applying pressure with the probe
- mild inflammation: slight change in colour or slight oedema but no bleeding after applying pressure with the probe
- none of the above.

Data recording for examinations

Each code called by an examiner was recorded directly onto a laptop computer by state/territory staff who had experience in clinical dental procedures. They were trained in use of the software during the 2-day training session for examination teams held at The University of Adelaide.

Assessment of inter-examiner reliability

In order to measure inter-examiner reliability, the principal survey examiner attended examination sessions for all but one examiner to conduct masked replicate examinations of survey participants. The remaining examiner withdrew from the survey after completing 32 examinations. Replicate examination entailed assessments of tooth presence, periodontal assessment of teeth in one jaw, and assessment of caries experience in both crowns and roots of teeth. The observed levels of agreement for most oral health indicators were equivalent to benchmarks reported for national oral health surveys conducted in the United Kingdom and the United States.

Period of data collection

Data collection began in July 2004 and was completed in September 2006 (Table 2). Interviews were timed to begin approximately 1 month prior to the planned start of examinations in each jurisdiction.

Table 2: Periods of data collection in states and territories

State/territory	Dates of interviews		Dates of examinations	
	Beginning	End	Beginning	End
ACT	July 2004	October 2004	July 2004	October 2004
SA	September 2004	December 2004	September 2004	May 2005
WA	October 2004	March 2005	November 2004	May 2005
Vic	January 2005	September 2005	February 2005	September 2005
NSW	May 2005	November 2005	June 2005	July 2006
NT	August 2005	October 2005	September 2005	March 2006
Tas	January 2006	May 2006	March 2006	September 2006
Qld	March 2006	September 2006	June 2006	September 2006
Australia	July 2004	September 2006	July 2004	September 2006

Ethical conduct of research

This project was reviewed and approved by The University of Adelaide's Human Research Ethics Committee. Interviewed subjects provided verbal consent prior to answering questions. All examined subjects provided signed, informed consent prior to the examination.

Target sample size

Sample size requirements were calculated for a range of key outcome variables to be reported nationally. One outcome, the capacity to detect a 25% or greater reduction in national age-specific estimates of mean number of decayed teeth since 1987–88, was nominated as the critical threshold that should be detectable with standard statistical power of 80%. Another outcome was a capacity to detect a 10% or greater reduction in national age-specific mean DMFT. This identified a need for 7,500 examinations and 13,560 interviews, assuming a 65% participation rate in the examination. The sample size within each state and territory was planned to be approximately proportional to the population of the jurisdiction.

Participation in the survey

National participation rates were lower than intended, both in the interview, where 49.0% of sampled people participated, and the examination, where 43.7% of those eligible took part. Interview participation rates varied from 43.9% in NSW to 61.8% in SA. Examination rates varied from 33.2% in NSW to 57.5% in SA (Table 3).

Table 3: Number and percentage of people sampled, interviewed and examined^(a)

	No. of people sampled	No. of people interviewed	Per cent of sampled people interviewed	No. of people eligible for exam	No. of people examined	Per cent of eligible people examined
Australia	28,812	14,123	49.0	12,606	5,505	43.7
State/territory						
NSW	8,270	3,630	43.9	3,310	1,099	33.2
Vic	6,013	2,667	44.4	2,360	1,181	50.0
Qld	4,219	2,052	48.6	1,841	824	44.8
SA	2,159	1,335	61.8	1,093	629	57.5
WA	2,365	1,290	54.5	1,109	470	42.4
Tas	1,745	1,042	59.7	873	385	44.1
ACT	1,892	1,025	54.2	981	400	40.8
NT	2,149	1,082	50.3	1,039	517	49.8

(a) Unweighted data.

Data analysis

The aim of the data analysis was to generate summary statistics describing oral health for the Queensland population. With the exception of data regarding participation rates, results in this report have been weighted to compensate for individuals' different probabilities of selection and survey participation rates. For the telephone interview survey, weights were adjusted to ensure survey estimates were consistent with the 2005 Australian Bureau of Statistics Estimated Residential Population data. For the oral examination survey, which was restricted to dentate people aged 15 years or more, estimates of the dentate population were derived from the telephone interview survey and used to derive examination weights. This means that results can be generalised to the Queensland population.

Tables 35 and 36 contain age-standardised estimates for each indicator presented in preceding tables. Age standardisation is a statistical procedure that aims to remove any effects of age that might account for differences in each oral health indicator between the two comparison groups: health cardholders versus non-health cardholders (Table 35) and insured versus non-insured people (Table 36). For these tables, percentages and means were standardised using the direct method. The reference population was the 2005 Australian Estimated Residential Population classified into 14 five-year age categories within the range 15–84 years and a fifteenth category aged 85 years of more.

Presentation of results

Oral health measures are tabulated for each of three age groups representing the survey participant's age reported in the telephone interview, plus an 'all ages' summary. The three age groups are: 15–34 years, 35–54 years and ≥55 years. The tables report estimates for mutually exclusive subgroups of people created for each of six characteristics based on responses to the telephone interview questions. The subgroups and unweighted number of respondents are listed in the Appendix to this volume and the six characteristics are described below:

Sex was classified as 'Male' or 'Female' recorded during the interview.

Residential location was classified as 'Capital city' or 'Other places' based on the sampling postcode used in selection of households.

Postcode socioeconomic status was used to classify individuals according to the Index of Relative Socioeconomic Advantage/Disadvantage (IRSAD) of the postcode in which they lived. The IRSAD is an aggregate measure of a postcode's socioeconomic status based on characteristics of its residents recorded in the 2001 Population Census. A postcode that has a relatively high proportion of people with high incomes or a skilled labour force is assigned a relatively higher value on this index. Conversely, a low score on the index indicates that an area has a higher proportion of individuals with low incomes and more people who work in unskilled occupations. Postcodes were classified into three groups of ascending socioeconomic status, each group comprising approximately one-third of the Queensland population. This type of analysis is said to be 'ecological' because it is not based on individuals' own socioeconomic status, but on the socioeconomic status of the area in which they live. Hence, care should be taken in the interpretation of results – because Socioeconomic Indices for Areas (SEIFA) scores refer to areas, not individuals, results are not interpretable at the level of the individual.

Government health card status identified whether or not people were covered either by a pensioner concession card or health care card. Both cards are issued according to a means test administered by Centrelink, an agency of the Australian Government's Family Assistance Office. People with either card and their dependents are eligible for public-sector dental care in most states and territories.

Place of last dental visit further disaggregated health cardholders according to the location of their last dental visit. The latter was established during the interview by asking people 'Where did you make your last dental visit?'. Health cardholders who responded 'Government dental clinic' or 'School dental service' were classified as 'Cardholder/Public'. Otherwise, eligible people were classified as 'Cardholder/Non-public' if they reported any of the other locations: Private dental practice (including specialist); Dental technician; Clinic operated by health insurance fund; Armed Services/Defence Force clinic; Other site. People who were not health cardholders were classified as 'Non-cardholder/Non-public' regardless of their reported visit location.

Dental insurance coverage was based on responses to the question 'Do you have private insurance cover for dental expenses?'. People were classified as insured if they responded 'yes' and uninsured if they responded 'no'.

Criteria for determining statistical significance

As with any survey where data are collected from only some of the people in the population, proportions and means in this report are estimates of the true population values. The 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 those two values.

In this report 95% CIs are used additionally as a guideline to identify differences between population subgroups that are statistically significant. Specifically, when there is no overlap between 95% CIs for two groups, the difference between the groups is deemed to be statistically significant. This criterion for judging statistical significance is more conservative than the alternative method of calculating P-values. In fact, when 95% CIs do not overlap, it means that a test of statistical significance for the difference between the groups would have a P-value of less than 0.05 (the conventional threshold used in many reports), and it could be as small as less than 0.005. The 'conservative' nature of the criterion used in this report comes about because 95% CIs that overlap to a small degree could, nevertheless, be found to differ to a statistically significant degree (at $P < 0.05$) using a hypothesis test.

Data files were managed and summary variables computed using SAS software version 9.1.¹ Means and their associated 95% CIs were generated using SUDAAN software release 9.0.0.² The SUDAAN procedures used sampling weights to generate population estimates and calculated 95% CIs that allowed for the complex sampling design used in this survey. To do so, 'with replacement' sampling was specified with two levels of stratification (state and section of state). The subject's sampling postcode was specified as the primary sampling unit, which was used by SUDAAN as the clustering variable.

¹ SAS Institute Inc. 100 SAS Campus Drive, Cary, NC 27513-2414, USA.

² Research Triangle Institute. PO Box 12194, Research Triangle Park, NC 27709-2194, USA.

Distribution of sociodemographic and dental access characteristics

Approximately one-half of the Queensland population was female, with little variation in the proportion among age groups (Table 4). Nearly one-half lived in the capital city, a proportion that was slightly higher in the youngest age group and higher in the oldest age group. By design, people of all ages were approximately evenly distributed among tertiles of postcode socioeconomic status. However, older people were more likely than younger people to live in areas with lower socioeconomic status. Approximately one-quarter of the population were government health cardholders, although the proportion was noticeably greater for people aged 55 years or more. People who had a government health card were equally likely to have last attended a public dental clinic or other dental care providers, although that tendency varied among age groups. Nearly one-half of the Queensland population had dental insurance, although the proportion was somewhat lower for the youngest age group.

Table 4: Percentage of people with selected sociodemographic and dental access characteristics in the Queensland population and three age groups

	All ages	Age group (years)		
		15–34	35–54	>=55
Sex				
Males	49.9	50.8	49.4	49.2
Females	50.1	49.2	50.6	50.8
Residential location				
Capital city	46.8	48.8	46.2	44.6
Other places	53.2	51.2	53.8	55.4
Postcode socioeconomic status				
Lowest	29.5	23.8	29.6	37.9
Middle	34.2	36.0	34.3	31.4
Highest	36.2	40.1	36.0	30.7
Government health card				
Health care card or pensioner concession card	25.4	21.7	15.4	46.0
Neither card	74.6	78.3	84.6	54.0
Place of last dental visit				
Cardholder/Public	13.1	12.4	9.3	19.7
Cardholder/Non-public	12.4	9.3	6.1	26.3
Non-cardholder/Non-public	74.6	78.3	84.6	54.0
Dental insurance				
Insured	47.6	41.8	52.3	48.8
Uninsured	52.4	58.2	47.7	51.2

3 Oral health status

Complete tooth loss

In NSAOH, complete tooth loss was assessed in the interview by asking people 'Do you have any of your own natural teeth?'. People who answered 'no' were classified as edentulous. In Queensland, edentulous people represented 5.8% of the population aged 15 years or more (Table 5), which was similar to the national estimate of 6.4% (Slade et al. 2007).

Key findings

- The prevalence of edentulism was strongly associated with age, being negligible among 15–34-year-olds but affecting 18.5% of Queensland adults aged 55 years or more.
- Prevalence of complete tooth loss did not vary to a statistically significant degree between males and females.
- People living in regional areas were more likely than residents of Brisbane to be edentulous, both for all ages combined and for 35–54-year-olds.
- Prevalence was more than twice as high among people living in postcodes with low socioeconomic status (8.7% for all ages) than in postcodes with high socioeconomic status (3.3% for all ages). Within age groups, the difference was statistically significant only for 35–54-year-olds and for people aged 55 years or more. Intermediate prevalence rates were observed for people living in postcodes with middle rankings of socioeconomic status.
- Among all ages, people who had a government health card were five times more likely to be edentulous (14.7%) than those who did not (2.9%). Within age groups, government health cardholder status was statistically significantly associated with edentulism only among people aged 55 years or more.
- Within the population of government health cardholders, there was no clear pattern of variation in prevalence of edentulism according to the location of most recent dental visit.
- Prevalence was lower for people with dental insurance compared with the uninsured, a difference that was statistically significant for all ages combined and for people aged 55 years or more.

Discussion

As emphasised in the national report, variation among age groups in prevalence of edentulism can be attributed primarily to the differing historical experiences of generations born in different time periods during the 20th century, rather than the effects of ageing. Because edentulism prevalence was so strongly dependent upon age group, comparisons between population groups were observed most clearly for the oldest age group.

In summary, complete tooth loss in Queensland was a condition observed infrequently below the age of 55 years, while among people aged 55 years or more, it was most likely to occur among people living outside Brisbane and in socioeconomically disadvantaged groups.

Table 5: Percentage of adults with complete tooth loss

		Population: all people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	5.8	0.0	1.3	18.5
	<i>95% CI^(a)</i>	<i>4.9–6.9</i>	—	<i>0.7–2.5</i>	<i>15.9–21.4</i>
Sex					
Males	% of people	5.4	0.0	1.6	17.0
	<i>95% CI</i>	<i>4.0–7.1</i>	—	<i>0.5–4.6</i>	<i>12.8–22.3</i>
Females	% of people	6.3	0.0	1.0	19.9
	<i>95% CI</i>	<i>5.0–7.8</i>	—	<i>0.5–1.9</i>	<i>15.9–24.6</i>
Residential location					
Capital city	% of people	3.9	0.0	0.2	14.4
	<i>95% CI</i>	<i>3.1–4.9</i>	—	<i>0.1–0.9</i>	<i>11.3–18.1</i>
Other places	% of people	7.4	0.0	2.2	21.6
	<i>95% CI</i>	<i>5.9–9.2</i>	—	<i>1.1–4.5</i>	<i>17.8–25.9</i>
Postcode socioeconomic status					
Lowest	% of people	8.7	0.0	3.1	22.3
	<i>95% CI</i>	<i>7.0–10.8</i>	—	<i>1.3–7.2</i>	<i>18.0–27.2</i>
Middle	% of people	5.7	0.0	0.9	19.5
	<i>95% CI</i>	<i>4.3–7.4</i>	—	<i>0.4–2.0</i>	<i>15.1–24.8</i>
Highest	% of people	3.3	0.0	0.1	12.8
	<i>95% CI</i>	<i>2.4–4.5</i>	—	<i>0.0–1.0</i>	<i>9.1–17.6</i>
Government health card					
Health care card or pensioner concession card	% of people	14.7	0.0	1.8	25.5
	<i>95% CI</i>	<i>12.4–17.3</i>	—	<i>0.6–6.0</i>	<i>21.9–29.4</i>
Neither card	% of people	2.9	0.0	1.2	11.9
	<i>95% CI</i>	<i>2.1–3.9</i>	—	<i>0.5–2.7</i>	<i>8.9–15.7</i>
Place of last dental visit					
Cardholder/Public	% of people	13.9	0.0	2.9	27.9
	<i>95% CI</i>	<i>10.0–19.1</i>	—	<i>0.6–12.0</i>	<i>20.7–36.6</i>
Cardholder/Non-public	% of people	15.2	0.0	0.9	24.1
	<i>95% CI</i>	<i>11.8–19.3</i>	—	<i>0.1–6.6</i>	<i>19.3–29.6</i>
Non-cardholder/Non-public	% of people	2.9	0.0	1.2	11.9
	<i>95% CI</i>	<i>2.1–3.9</i>	—	<i>0.5–2.7</i>	<i>8.9–15.7</i>
Dental insurance					
Insured	% of people	3.6	0.0	1.4	9.9
	<i>95% CI</i>	<i>2.5–5.1</i>	—	<i>0.5–3.9</i>	<i>7.1–13.8</i>
Uninsured	% of people	7.8	0.0	1.2	25.6
	<i>95% CI</i>	<i>6.4–9.6</i>	—	<i>0.5–3.2</i>	<i>21.6–30.1</i>

(a) 95% CI = 95% confidence interval for estimated percentage.

Inadequate natural dentition among dentate people

Adults who have approximately 20 teeth or more usually have satisfactory chewing function (Elias & Sheiham 1998), diet and nutritional status (Sheiham et al. 2002), whereas people with fewer teeth are more likely to suffer impaired quality of oral health (McGrath & Bedi 2002). In NSAOH, people were asked during the interview to report either the number of remaining teeth or the number of missing teeth in their upper jaw and lower jaw. Responses were used to classify people as having an inadequate natural dentition if they reported having fewer than 21 natural teeth, the same threshold that has been reported for the UK population. In Queensland, 11.2% of dentate adults had fewer than 21 teeth (Table 6), which was almost identical to the national figure of 11.4% (Slade et al. 2007).

Key findings

- The prevalence of an inadequate natural dentition was strongly associated with age, occurring in fewer than 1% of people aged 15–34 years but affecting approximately one-third of dentate people aged 55 years or more.
- Differences in prevalence between males and females were small and statistically non-significant, both for the population as a whole and within the three age groups.
- Similarly, prevalence did not vary to a statistically significant degree between residents of Brisbane and the rest of the state.
- Among all ages combined, prevalence of an inadequate dentition was approximately twice as high in postcodes with low socioeconomic status (15.2%) than postcodes of high socioeconomic status (6.9). People living in postcodes with middle socioeconomic status had prevalence rates that were intermediate between the other two groups. The same pattern was observed among people aged 55 years or more, while the pattern was less consistent and statistically non-significant within the two younger age groups.
- For all ages combined and people aged 55 years or more, those who had a government health card were more likely to have an inadequate natural dentition than were non-cardholders.
- Within the population of cardholders, there was a tendency for age-group-specific prevalence to be higher for those whose last dental visit was to the public sector than for those who attended a private dentist. However, the difference was not statistically significant.
- People with dental insurance were less likely to have an inadequate natural dentition than the uninsured, and the difference was statistically significant for all ages combined and for people aged 55 years or more.

Discussion

A threshold of fewer than 21 teeth is used here as an indicator of likely impairments in oral function, nutrition and quality of life, rather than a cardinal sign of those problems. As observed for complete tooth loss, there was a pronounced age-gradient in prevalence of an inadequate natural dentition. Because of this age-association, valid comparisons between other sociodemographic groups should be made only within age groups. Those comparisons reveal that prevalence was associated with postcode socioeconomic status, government health cardholder status and dental insurance. However, unlike the pattern observed for complete tooth loss, prevalence of an inadequate natural dentition did not vary significantly between Brisbane and the rest of the state.

Table 6: Percentage of people with fewer than 21 teeth

		Population: dentate people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	11.2	0.3	7.2	33.8
	<i>95% CI^(a)</i>	<i>9.7–12.9</i>	<i>0.1–0.9</i>	<i>5.4–9.5</i>	<i>29.4–38.5</i>
Sex					
Males	% of people	9.8	0.0	5.2	32.3
	<i>95% CI</i>	<i>7.9–12.2</i>	—	<i>3.0–9.0</i>	<i>25.4–40.0</i>
Females	% of people	12.6	0.5	9.2	35.3
	<i>95% CI</i>	<i>10.7–14.8</i>	<i>0.2–1.7</i>	<i>6.8–12.3</i>	<i>30.2–40.8</i>
Residential location					
Capital city	% of people	10.0	0.4	7.5	29.8
	<i>95% CI</i>	<i>7.8–12.8</i>	<i>0.1–1.7</i>	<i>4.8–11.6</i>	<i>23.1–37.6</i>
Other places	% of people	12.3	0.1	6.9	37.1
	<i>95% CI</i>	<i>10.4–14.5</i>	<i>0.0–0.9</i>	<i>4.9–9.8</i>	<i>31.5–43.0</i>
Postcode socioeconomic status					
Lowest	% of people	15.2	0.2	7.4	42.6
	<i>95% CI</i>	<i>12.8–17.9</i>	<i>0.0–1.6</i>	<i>4.9–11.2</i>	<i>36.9–48.4</i>
Middle	% of people	12.1	0.6	9.7	34.2
	<i>95% CI</i>	<i>10.0–14.6</i>	<i>0.1–2.4</i>	<i>6.4–14.4</i>	<i>26.8–42.5</i>
Highest	% of people	6.9	0.0	4.1	23.8
	<i>95% CI</i>	<i>5.0–9.5</i>	—	<i>2.3–7.0</i>	<i>16.6–33.0</i>
Government health card					
Health care card or pensioner concession card	% of people	24.9	0.8	11.2	45.3
	<i>95% CI</i>	<i>21.0–29.4</i>	<i>0.2–3.2</i>	<i>7.0–17.5</i>	<i>39.4–51.3</i>
Neither card	% of people	7.2	0.2	6.6	24.6
	<i>95% CI</i>	<i>6.0–8.7</i>	<i>0.0–1.1</i>	<i>4.7–9.2</i>	<i>19.2–30.9</i>
Place of last dental visit					
Cardholder/Public	% of people	26.4	0.0	18.3	55.2
	<i>95% CI</i>	<i>20.2–33.6</i>	—	<i>10.0–31.3</i>	<i>46.7–63.4</i>
Cardholder/Non-public	% of people	23.9	1.6	4.9	40.1
	<i>95% CI</i>	<i>18.8–29.8</i>	<i>0.4–6.8</i>	<i>1.9–12.2</i>	<i>32.9–47.9</i>
Non-cardholder/Non-public	% of people	7.2	0.2	6.6	24.6
	<i>95% CI</i>	<i>6.0–8.7</i>	<i>0.0–1.1</i>	<i>4.7–9.2</i>	<i>19.2–30.9</i>
Dental insurance					
Insured	% of people	8.8	0.2	5.1	23.6
	<i>95% CI</i>	<i>6.8–11.4</i>	<i>0.0–1.4</i>	<i>2.9–8.8</i>	<i>18.7–29.4</i>
Uninsured	% of people	13.8	0.3	9.6	44.2
	<i>95% CI</i>	<i>11.5–16.3</i>	<i>0.1–1.5</i>	<i>7.0–12.9</i>	<i>38.3–50.4</i>

(a) 95% CI = 95% confidence interval for estimated percentage.

Denture wearing by dentate people

Removable dentures, also called 'false teeth', are worn to replace missing teeth, with the objective to improve function (for example eating), appearance or both. Whereas virtually all edentulous people wear dentures, the decision of dentate people to wear dentures is influenced by numerous factors in addition to the number and location of missing teeth. In NSAOH, removable denture wearing was assessed during the interview by asking two similar questions, 'Do you have a denture or false teeth for your upper (lower) jaw?'. There were 15.0% of dentate adults in Queensland who reported wearing one or two dentures (Table 7), a figure that was similar to 14.9% reported nationally (Slade et al. 2007).

Key findings

- The frequency of denture wearing was strongly associated with age, ranging from 1.4% among 15–34-year-olds to 41.1% among people aged 55 years or more.
- There were small and statistically non-significant differences between the sexes in the percentage of denture wearers.
- Similarly, there were small and statistically non-significant differences between residents of Brisbane and the rest of the state.
- In the oldest age group, there was a socioeconomic gradient in denture wearing, with higher percentages observed among people living in postcodes with low socioeconomic status compared with high socioeconomic status. However, in other age groups and among all ages combined, the differences were not statistically significant, and a clear gradient in prevalence between low, middle and high socioeconomic postcodes was not observed.
- Large differences were observed between people who had a government health card (28.9%) and those who did not (11.0%). The difference was statistically significant for all ages combined and for people aged 55 years or more.
- Within the population of government health cardholders, there were no consistent differences between those who attended the public sector dental care compared with people who attended non-public sources.
- People without dental insurance were somewhat more likely to wear dentures than the insured, although the difference was statistically significant only for people aged 55 years or more.

Discussion

The percentage of dentate adults in Queensland who wore dentures (15.0%) exceeded the percentage with fewer than 21 natural teeth (11.2%), illustrating that the decision to wear dentures is dictated by factors other than the number of missing teeth. In general, however, sociodemographic variation in frequency of denture wearing was of a similar direction and magnitude to sociodemographic variation in prevalence of an inadequate natural dentition.

Table 7: Percentage of dentate people who wear denture(s)

		Population: dentate people			
		Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	15.0	1.4	11.3	41.1
	95% CI ^(a)	13.4–16.8	0.6–3.2	9.0–14.1	37.2–45.1
Sex					
Males	% of people	14.7	2.4	10.3	40.4
	95% CI	12.5–17.2	0.9–5.9	6.7–15.4	35.2–45.9
Females	% of people	15.3	0.3	12.3	41.7
	95% CI	13.4–17.5	0.1–1.3	9.8–15.3	36.5–47.0
Residential location					
Capital city	% of people	14.0	2.1	10.9	38.5
	95% CI	11.7–16.8	0.8–5.5	7.6–15.4	32.3–45.2
Other places	% of people	15.8	0.7	11.6	43.1
	95% CI	13.6–18.3	0.1–3.2	8.6–15.4	38.4–48.0
Postcode socioeconomic status					
Lowest	% of people	16.9	0.3	8.3	47.4
	95% CI	14.4–19.7	0.0–2.0	5.7–11.9	42.2–52.6
Middle	% of people	16.9	1.7	15.6	42.2
	95% CI	14.2–19.9	0.5–6.4	11.5–20.8	35.5–49.1
Highest	% of people	11.5	1.9	8.7	33.0
	95% CI	9.0–14.5	0.6–5.9	5.9–12.7	26.2–40.5
Government health card					
Health care card or pensioner concession card	% of people	28.9	2.8	17.4	49.2
	95% CI	24.6–33.6	0.7–10.8	11.5–25.5	43.5–54.9
Neither card	% of people	11.0	1.1	10.3	34.4
	95% CI	9.3–12.9	0.4–3.3	7.8–13.4	28.8–40.6
Place of last dental visit					
Cardholder/Public	% of people	26.7	1.8	20.7	52.6
	95% CI	19.8–35.0	0.4–7.0	11.2–35.2	43.0–62.1
Cardholder/Non-public	% of people	30.5	4.0	14.6	47.4
	95% CI	25.3–36.2	0.5–24.7	7.7–25.8	40.0–54.9
Non-cardholder/Non-public	% of people	11.0	1.1	10.3	34.4
	95% CI	9.3–12.9	0.4–3.3	7.8–13.4	28.8–40.6
Dental insurance					
Insured	% of people	14.2	2.6	9.2	33.9
	95% CI	11.9–16.7	0.8–7.6	6.4–12.9	28.4–39.9
Uninsured	% of people	16.3	0.8	13.5	48.3
	95% CI	13.7–19.3	0.2–3.1	10.0–18.1	41.7–55.0

(a) 95% CI = 95% confidence interval for estimated percentage.

Average number of teeth per person missing due to pathology

During NSAOH examinations of people aged less than 45 years, dentists counted the number of teeth judged to be missing due to decay or gum disease; for older age groups, dentists counted the number of teeth missing for any reason. The distinction according to age was made because often it is very difficult to judge in older people whether teeth have been extracted because of decay, gum disease or other causes (for example orthodontic reasons), or whether the teeth never developed or remain unerupted. Instead, the convention is to assume that teeth not present among people aged 45 years or more are missing due to pathology. In Queensland, dentate people had an average of 4.3 teeth per person missing due to pathology (Table 8), a figure that was similar to the national average of 4.5 (Slade et al. 2007).

Key findings

- The average number of missing teeth per person was strongly associated with age, ranging from less than 1 among 15–34-year-olds to 11.1 among people aged 55 years or more.
- There was little difference between males and females, within age groups and for all ages combined.
- The number of missing teeth per person tended to be lower among residents of Brisbane than the rest of Queensland, although the difference was not statistically significant, either within age groups or in all ages combined.
- A socioeconomic gradient was observed for all ages combined, whereby people living in postcodes with low socioeconomic status had more teeth missing due to pathology, on average, than people living in postcodes with high socioeconomic status. The gradient was also statistically significant in the oldest age group.
- Average levels of tooth loss tended to be higher among people who had a government health card compared with those who did not, and the differences were statistically significant in the oldest age group and among all ages combined.
- Among government health cardholders, there tended to be higher average levels of tooth loss for people whose last dental visit was in the public sector compared to the non-public sector, although the tendency was not statistically significant.
- Dental insurance was not strongly associated with average levels of tooth loss due to pathology for all ages combined. Among people aged 55 years or more, the average was greater in the uninsured than the insured, and the difference was statistically significant.

Discussion

Consistent with findings from preceding tables describing other aspects of tooth loss, the average number of teeth missing due to pathology was very low among the youngest (15–34 years) age group. Furthermore, because average levels of tooth loss were so strongly associated with age, it is prudent to limit inferences about sociodemographic variation to comparisons only within age groups. It follows that the most reliable assessments of sociodemographic differences were observed among the oldest age group. As observed for all other measures of tooth loss, the average number of teeth per person missing due to pathology was associated with postcode socioeconomic status, government health cardholder status and dental insurance.

Table 8: Average number of teeth per person missing due to pathology

		Population: dentate people Age (years)			
		All ages	15–34	35–54	≥55
All people	mean	4.3	0.6	3.5	11.1
	95% CI ^(a)	3.8–4.8	0.4–0.9	3.1–4.0	10.2–12.0
Sex					
Males	mean	4.1	0.7	3.2	10.7
	95% CI	3.5–4.7	0.2–1.2	2.5–3.9	9.6–11.7
Females	mean	4.6	0.6	3.9	11.5
	95% CI	3.8–5.4	0.3–0.9	3.2–4.5	10.2–12.8
Residential location					
Capital city	mean	3.6	0.4	3.0	10.1
	95% CI	3.1–4.2	0.1–0.7	2.4–3.6	8.7–11.5
Other places	mean	4.9	0.9	4.0	11.9
	95% CI	4.1–5.8	0.4–1.3	3.5–4.6	10.7–13.1
Postcode socioeconomic status					
Lowest	mean	5.8	0.8	4.1	12.7
	95% CI	4.7–7.0	0.1–1.4	3.2–4.9	11.4–14.1
Middle	mean	4.4	1.0	3.9	11.0
	95% CI	3.8–5.0	0.6–1.5	3.2–4.6	9.5–12.5
Highest	mean	3.1	0.2	2.8	9.2
	95% CI	2.5–3.6	<0–0.4	2.1–3.4	7.8–10.5
Government health card					
Health care card or pensioner concession card	mean	7.1	0.8	5.0	12.5
	95% CI	6.0–8.2	0.2–1.4	3.5–6.5	11.4–13.5
Neither card	mean	3.5	0.6	3.3	9.9
	95% CI	2.9–4.0	0.3–0.9	2.9–3.7	8.5–11.3
Place of last dental visit					
Cardholder/Public	mean	7.1	0.6	6.3	13.6
	95% CI	5.3–8.9	<0–1.2	4.4–8.2	12.0–15.2
Cardholder/Non-public	mean	7.0	1.0	3.0	11.6
	95% CI	5.6–8.4	0.2–1.9	1.0–5.0	10.1–13.1
Non-cardholder/Non-public	mean	3.5	0.6	3.3	9.9
	95% CI	2.9–4.0	0.3–0.9	2.9–3.7	8.5–11.3
Dental insurance					
Insured	mean	4.0	0.5	3.1	9.5
	95% CI	3.4–4.6	0.2–0.8	2.5–3.6	8.3–10.6
Uninsured	mean	5.0	0.8	4.3	12.7
	95% CI	4.2–5.9	0.5–1.2	3.5–5.1	11.5–13.8

(a) 95% CI = 95% confidence interval for estimated mean.

Prevalence of untreated coronal decay

The prevalence of untreated coronal dental decay is reported in Table 9 as the percentage of dentate people who have at least one or more decayed surfaces on the crowns of their teeth. Untreated coronal decay reflects both the prevalence of dental decay in the population and access to dental care for treatment. The prevalence of untreated coronal decay in Queensland was 27.6% (Table 9), which is slightly higher than the national estimate of 25.5% (Slade et al. 2007).

Key findings

- The prevalence of untreated coronal decay was significantly associated with age, being more than twice as high among people aged 15–34 years compared with those aged 55 years or more (37.1% versus 15.8%).
- Among people of all ages, prevalence was not significantly associated with any of the sociodemographic variables examined, as indicated by the overlapping of 95% CIs in each case.
- The highest prevalence was seen among government health cardholders who last visited a public clinic (40.3%), and the lowest among those holding private dental insurance (21.2%).
- While not reaching statistical significance, a number of trends may be discerned in the results in relation to sociodemographic factors. More uninsured people appeared to have untreated coronal decay than insured people (33.2% versus 21.2%), and more government health cardholders who last visited a public clinic than non-cardholders who visited elsewhere (40.3% versus 25.9%).
- Among people aged 35–54 years, a significant difference was found in relation to sex.

Discussion

Prevalence of untreated coronal decay was significantly associated with age but not other sociodemographic variables. The lack of association with disadvantage may be due to the extensive public dental service in Queensland.

In summary, more than one-quarter of all people in Queensland had untreated coronal decay but this was not associated with sociodemographic variables.

Table 9: Percentage of people with untreated coronal decay

		Population: dentate people			
		Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	27.6	37.1	25.9	15.8
	<i>95% CI^(a)</i>	23.7–32.0	28.9–46.2	19.6–33.4	12.0–20.6
Sex					
Males	% of people	28.8	29.3	36.9	15.6
	<i>95% CI</i>	22.3–36.2	18.0–44.0	26.1–49.3	10.1–23.3
Females	% of people	26.5	45.2	15.1	16.1
	<i>95% CI</i>	20.8–33.1	33.4–57.5	10.1–22.0	11.1–22.8
Residential location					
Capital city	% of people	24.3	34.5	19.3	15.5
	<i>95% CI</i>	18.5–31.4	23.6–47.3	12.2–29.1	10.1–23.0
Other places	% of people	30.5	39.7	31.6	16.2
	<i>95% CI</i>	25.5–36.1	28.0–52.6	22.2–42.8	11.2–22.8
Postcode socioeconomic status					
Lowest	% of people	27.3	36.0	30.6	15.2
	<i>95% CI</i>	20.7–35.0	24.5–49.2	16.6–49.3	9.4–23.6
Middle	% of people	32.6	43.9	26.8	22.4
	<i>95% CI</i>	26.4–39.5	30.1–58.9	18.7–36.8	15.6–31.2
Highest	% of people	23.2	31.7	21.2	9.9
	<i>95% CI</i>	16.8–31.2	19.6–47.0	13.2–32.2	5.2–18.0
Government health card					
Health care card or pensioner concession card	% of people	32.7	57.4	29.5	17.1
	<i>95% CI</i>	25.1–41.4	38.6–74.3	15.5–49.0	12.2–23.3
Neither card	% of people	25.9	31.7	25.4	14.8
	<i>95% CI</i>	20.9–31.7	22.3–42.8	18.3–33.9	9.6–22.2
Place of last dental visit					
Cardholder/Public	% of people	40.3	65.3	32.8	22.4
	<i>95% CI</i>	29.2–52.6	37.0–85.8	17.6–52.8	14.6–32.7
Cardholder/Non-public	% of people	24.7	47.0	24.5	13.1
	<i>95% CI</i>	14.2–39.4	19.7–76.2	5.4–65.0	7.3–22.3
Non-cardholder/Non-public	% of people	25.9	31.7	25.4	14.8
	<i>95% CI</i>	20.9–31.7	22.3–42.8	18.3–33.9	9.6–22.2
Dental insurance					
Insured	% of people	21.2	34.2	16.6	12.8
	<i>95% CI</i>	15.6–28.1	20.6–51.0	10.7–24.9	8.0–19.7
Uninsured	% of people	33.2	44.0	31.3	18.9
	<i>95% CI</i>	27.1–40.0	31.9–56.9	22.9–41.2	13.7–25.5

(a) 95% CI = 95% confidence interval for estimated percentage.

Percentage of people with untreated root decay

The prevalence of untreated root decay is reported as the percentage of people who had at least one natural tooth and one or more surfaces of the roots of their teeth decayed. Decay of the root surface requires that it be exposed in the mouth, usually by recession of the gums. The prevalence of untreated root decay in Queensland was 5.5% (Table 10), which is slightly lower than for the Australian population (6.7%) (Slade et al. 2007).

Key findings

- Prevalence of untreated root decay was significantly associated with age. There was a 6.6-fold relative difference between prevalence in people aged 55 years or more compared with those aged 15–34 years (12.5% versus 1.9%). Prevalence among those aged 55 years or more was greater than twice that of those in the 35–54 years age group (12.5% versus 4.4%).
- Among people of all ages, the highest prevalence was seen in government health cardholders who last visited a public clinic (10.4%), and the lowest in those who resided in areas of highest socioeconomic status (3.2%).
- Prevalence of root decay was not significantly associated with any of the sociodemographic variables examined, as indicated by the overlapping of 95% CIs.
- While not reaching statistical significance, a number of trends may be discerned in the results in relation to sociodemographic factors. More uninsured people appeared to have untreated root decay than the insured (7.5% versus 3.8%), and more government health cardholders than non-cardholders (7.4% versus 4.9%).

Discussion

The association of root decay with gum recession more commonly seen in older people explains the strong relationship of untreated root decay with age. Untreated root decay also reflects access to timely treatment services, but this association was not evident in Queensland. The lack of association with disadvantage may be due to the extensive public dental service in Queensland.

Table 10: Percentage of people with untreated root decay

		Population: dentate people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	5.5	1.9	4.4	12.5
	<i>95% CI^(a)</i>	4.0–7.5	0.6–6.2	2.6–7.4	9.3–16.6
Sex					
Males	% of people	7.1	1.6	7.0	15.9
	<i>95% CI</i>	4.7–10.7	0.4–6.8	3.5–13.4	10.9–22.7
Females	% of people	3.8	2.2	1.8	9.1
	<i>95% CI</i>	2.3–6.2	0.5–9.2	0.7–4.6	5.4–15.0
Residential location					
Capital city	% of people	4.3	1.6	2.5	11.7
	<i>95% CI</i>	2.6–7.2	0.2–11.1	0.9–6.7	7.5–17.8
Other places	% of people	6.5	2.3	6.0	13.1
	<i>95% CI</i>	4.4–9.6	0.5–9.2	3.2–11.0	8.7–19.2
Postcode socioeconomic status					
Lowest	% of people	5.6	4.8	3.1	9.4
	<i>95% CI</i>	3.6–8.8	1.2–17.9	1.3–7.0	5.8–14.8
Middle	% of people	7.8	2.2	7.3	18.3
	<i>95% CI</i>	4.9–12.0	0.3–14.5	3.5–14.6	12.0–26.9
Highest	% of people	3.2	0.0	2.8	10.3
	<i>95% CI</i>	1.5–6.6	—	0.8–8.8	5.5–18.7
Government health card					
Health care card or pensioner concession card	% of people	7.4	5.4	4.6	10.2
	<i>95% CI</i>	4.7–11.6	1.3–19.4	1.3–14.7	7.1–14.5
Neither card	% of people	4.9	1.0	4.4	14.4
	<i>95% CI</i>	3.2–7.3	0.1–7.1	2.4–7.9	9.5–21.2
Place of last dental visit					
Cardholder/Public	% of people	10.4	8.7	6.3	14.8
	<i>95% CI</i>	5.3–19.4	1.8–33.6	1.5–23.0	8.9–23.5
Cardholder/Non-public	% of people	4.3	1.0	1.9	6.8
	<i>95% CI</i>	2.4–7.5	0.1–7.5	0.2–13.2	3.8–11.8
Non-cardholder/Non-public	% of people	4.9	1.0	4.4	14.4
	<i>95% CI</i>	3.2–7.3	0.1–7.1	2.4–7.9	9.5–21.2
Dental insurance					
Insured	% of people	3.8	0.0	3.5	8.6
	<i>95% CI</i>	2.1–6.6	—	1.3–9.2	4.8–15.2
Uninsured	% of people	7.5	3.6	5.6	16.2
	<i>95% CI</i>	5.1–11.1	1.1–11.6	3.1–10.0	11.1–23.1

(a) 95% CI = 95% confidence interval for estimated percentage.

Percentage of people with one or more filled teeth

Fillings for treatment of tooth decay leave permanent marks on the teeth and are one measure of people's lifetime experience of decay. Filled teeth also indicate patterns of dental treatment and access to dental care. The prevalence of filled teeth in Queensland was 86.8% (Table 11), which is slightly higher than the Australian population figure (83.9%) (Slade et al. 2007).

Key findings

- Prevalence of filled teeth was associated with age; among those aged 55 years or more and 35–54 years, it was about 1.4 times that of those in the 15–34 years age group (97.4% and 96.8% versus 69.9% respectively).
- Among people of all ages, the highest prevalence was seen among government health cardholders who last attended a non-public clinic (95.0%), and the lowest among cardholders who last attended a public clinic (82.8%).
- Prevalence of filled teeth was not significantly associated with any of the sociodemographic variables examined, as indicated by the overlapping of 95% CIs.
- While not reaching statistical significance, a number of trends may be discerned in the results in relation to sociodemographic factors. More females appeared to have filled teeth than males (89.9% versus 83.7%), and more people who had a government health card and visited a non-public clinic than non-cardholders who also visited a non-public clinic (95.0% versus 85.7%).

Discussion

The percentage of people with filled teeth relates to lifetime experience of dental decay, and hence is associated with age. Prevalence also reflects access to timely dental care, and type of care used to treat caries being a restoration rather than an extraction. The lack of association with disadvantage may be due to the extensive public dental service in Queensland.

Table 11: Percentage of people with one or more filled teeth

		Population: dentate people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	86.8	69.9	96.8	97.4
	<i>95% CI^(a)</i>	<i>81.6–90.7</i>	<i>58.2–79.5</i>	<i>93.6–98.4</i>	<i>93.6–98.9</i>
Sex					
Males	% of people	83.7	61.6	97.0	98.0
	<i>95% CI</i>	<i>75.7–89.4</i>	<i>46.7–74.6</i>	<i>90.5–99.1</i>	<i>91.4–99.5</i>
Females	% of people	89.9	78.5	96.6	96.8
	<i>95% CI</i>	<i>84.6–93.6</i>	<i>65.2–87.7</i>	<i>92.0–98.6</i>	<i>90.4–99.0</i>
Residential location					
Capital city	% of people	85.9	68.5	96.8	97.8
	<i>95% CI</i>	<i>79.0–90.8</i>	<i>53.6–80.4</i>	<i>90.5–99.0</i>	<i>90.2–99.5</i>
Other places	% of people	87.6	71.3	96.8	97.1
	<i>95% CI</i>	<i>79.1–93.0</i>	<i>52.3–84.9</i>	<i>92.2–98.7</i>	<i>91.3–99.1</i>
Postcode socioeconomic status					
Lowest	% of people	82.8	47.6	99.1	97.0
	<i>95% CI</i>	<i>68.6–91.4</i>	<i>25.3–70.9</i>	<i>93.7–99.9</i>	<i>87.4–99.3</i>
Middle	% of people	90.3	80.7	96.9	96.2
	<i>95% CI</i>	<i>85.5–93.7</i>	<i>70.0–88.2</i>	<i>90.3–99.1</i>	<i>87.0–99.0</i>
Highest	% of people	86.8	73.5	94.8	99.1
	<i>95% CI</i>	<i>78.2–92.4</i>	<i>55.7–86.0</i>	<i>87.2–98.0</i>	<i>93.7–99.9</i>
Government health card					
Health care card or pensioner concession card	% of people	91.9	82.4	96.4	96.2
	<i>95% CI</i>	<i>84.7–95.8</i>	<i>61.9–93.1</i>	<i>85.0–99.2</i>	<i>90.3–98.6</i>
Neither card	% of people	85.7	67.8	96.9	98.3
	<i>95% CI</i>	<i>78.8–90.7</i>	<i>53.9–79.2</i>	<i>93.1–98.6</i>	<i>89.2–99.8</i>
Place of last dental visit					
Cardholder/Public	% of people	88.9	74.6	94.0	98.5
	<i>95% CI</i>	<i>76.2–95.3</i>	<i>46.1–91.0</i>	<i>75.4–98.8</i>	<i>90.2–99.8</i>
Cardholder/Non-public	% of people	95.0	92.6	100.0	94.5
	<i>95% CI</i>	<i>86.7–98.2</i>	<i>60.9–99.0</i>	—	<i>84.2–98.2</i>
Non-cardholder/Non-public	% of people	85.7	67.8	96.9	98.3
	<i>95% CI</i>	<i>78.8–90.7</i>	<i>53.9–79.2</i>	<i>93.1–98.6</i>	<i>89.2–99.8</i>
Dental insurance					
Insured	% of people	89.5	70.9	97.6	98.8
	<i>95% CI</i>	<i>82.5–93.9</i>	<i>53.2–83.9</i>	<i>91.4–99.4</i>	<i>95.6–99.7</i>
Uninsured	% of people	89.2	79.3	95.6	95.9
	<i>95% CI</i>	<i>83.3–93.2</i>	<i>66.5–88.2</i>	<i>90.0–98.1</i>	<i>88.4–98.7</i>

(a) 95% CI = 95% confidence interval for estimated percentage.

Average number of decayed, missing and filled teeth per person

The number of decayed, missing because of pathology, and filled teeth (DMFT) reflects a person's lifetime experience of dental caries. In this survey all missing teeth in people aged 45 years or more were counted as missing due to pathology, while for people aged less than 45 years, the count only included teeth where the examiner judged that dental decay or gum disease was the likely reason for the extraction. The average DMFT number in Queensland was 13.1 teeth (Table 12), which is slightly higher than that for the Australian population (12.8 teeth) (Slade et al. 2007).

Key findings

- The average number of affected teeth was significantly associated with age, being highest in people aged 55 years or more (23.1 teeth). This was 1.6 times that of the 35–44-year-olds (14.6 teeth) and four times that of the 15–34 years age group (5.0 teeth).
- Among people of all ages, the highest average was seen in government health cardholders who last attended a non-public clinic (16.8 teeth), and the lowest among non-cardholders who last visited a non-public clinic (11.9 teeth).
- Government health cardholder status was significantly associated with average number of teeth with caries experience, with cardholders having 1.3 times the prevalence compared with non-cardholders (15.8 versus 12.3 teeth).
- The average DMFT was associated with place of last dental visit, with government health cardholders who last visited a non-public practitioner having significantly higher scores than non-cardholders whose last visit was at a non-public clinic (16.8 versus 12.3 teeth).

Discussion

The average number of teeth with caries experience over a lifetime is a cumulative score, and hence is strongly associated with age. Disease experience is related to disadvantage, as evidenced by associations with government health cardholder status and place of last dental visit.

Table 12: Average number of decayed missing or filled teeth per person

		Population: dentate people			
		Age (years)			
		All ages	15–34	35–54	≥55
All people	mean	13.1	5.0	14.6	23.1
	95% CI ^(a)	12.2–14.0	4.1–5.9	13.8–15.4	22.7–23.6
Sex					
Males	mean	12.5	4.4	14.2	22.4
	95% CI	11.1–13.9	3.1–5.8	12.5–15.8	21.8–23.1
Females	mean	13.7	5.6	15.0	23.8
	95% CI	12.5–15.0	4.5–6.7	13.7–16.2	23.1–24.5
Residential location					
Capital city	mean	12.5	4.5	14.2	22.9
	95% CI	11.4–13.6	3.5–5.5	13.1–15.3	22.0–23.8
Other places	mean	13.7	5.4	14.9	23.3
	95% CI	12.3–15.0	4.0–6.8	13.7–16.2	22.9–23.8
Postcode socioeconomic status					
Lowest	mean	14.2	4.1	14.9	22.9
	95% CI	12.4–16.0	2.5–5.8	13.1–16.8	22.2–23.6
Middle	mean	13.4	6.0	15.2	23.4
	95% CI	12.2–14.7	4.6–7.5	14.0–16.4	22.7–24.2
Highest	mean	11.9	4.6	13.8	23.2
	95% CI	10.5–13.3	3.5–5.7	12.5–15.0	22.3–24.1
Government health card					
Health care card or pensioner concession card	mean	15.8	5.3	16.2	23.0
	95% CI	14.3–17.3	4.0–6.6	13.6–18.8	22.2–23.7
Neither card	mean	12.3	5.0	14.3	23.3
	95% CI	11.2–13.4	3.9–6.1	13.4–15.2	22.5–24.1
Place of last dental visit					
Cardholder/Public	mean	14.9	3.9	18.0	22.9
	95% CI	12.1–17.7	2.2–5.6	14.6–21.3	21.6–24.2
Cardholder/Non-public	mean	16.8	7.1	13.5	23.0
	95% CI	15.0–18.6	4.9–9.4	10.3–16.7	22.1–23.9
Non-cardholder/Non-public	mean	12.3	5.0	14.3	23.3
	95% CI	11.2–13.4	3.9–6.1	13.4–15.2	22.5–24.1
Dental insurance					
Insured	mean	13.9	5.1	14.9	22.9
	95% CI	12.6–15.2	3.8–6.3	13.7–16.1	22.2–23.6
Uninsured	mean	13.4	5.7	14.8	23.4
	95% CI	12.0–14.7	4.6–6.9	13.5–16.1	22.7–24.1

(a) 95% CI = 95% confidence interval for estimated mean.

Prevalence of moderate or severe periodontitis

A case definition of periodontitis has been developed jointly by the US Centers for Disease Control and Prevention (CDC) and the American Academy of Periodontology (AAP) to describe prevalence of moderate and severe periodontitis. The CDC/AAP defines moderate periodontitis as the presence of either two sites between adjacent teeth where the gum has lost its attachment to the tooth for 4 mm or more, or at least two such sites that have pockets of 5 mm or more. Severe periodontitis has been defined as having at least two sites between adjacent teeth where the gum has lost its attachment to the tooth for 6 mm or more, and there is at least one pocket of 5 mm or greater depth. Table 13 reports estimates of a combined moderate or severe periodontitis. In Queensland, a total of 24.1% of the dentate population had moderate or severe periodontitis (Table 13), which was higher, but not significantly, than the national estimate of 22.9% (Slade et al. 2007).

Key findings

- The prevalence of moderate or severe periodontitis was strongly associated with age, being 11.6% in 15–34-year-old adults but affecting 46.7% of Queensland adults aged 55 years or more. The difference between these two age groups was statistically significant.
- Males were more likely than females to have moderate or severe periodontitis; however, the difference was borderline non-significant.
- Residents in places other than the capital city were twice as likely to have periodontitis compared with Brisbane residents. The difference was 10-fold in the youngest age group and 2-fold in the oldest age group.
- The prevalence of periodontitis in people who had a government health card was higher than in those who did not. Similarly, it was higher in people who did not have private dental insurance than in those who did. However, the differences did not reach statistically significant levels.

Discussion

Components of periodontal disease measurement reflect both concurrent disease state and historical accumulation of the disease. Therefore, a strong association with age was fully expected. Because periodontitis was more prevalent in middle-aged and older people, comparisons between the population groups were observed most clearly in those age groups.

In summary, moderate or severe periodontitis affected one-quarter of the Queensland adult population, with the highest proportion of those affected being in the older age group. The disease was most likely to be observed in the residents of regional areas. There was also a trend of higher likelihood in people in lower socioeconomic position.

Table 13: Percentage of people with moderate or severe periodontitis

		Population: dentate people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	24.1	11.6	23.2	46.7
	<i>95% CI^(a)</i>	<i>20.0–28.7</i>	<i>6.7–19.5</i>	<i>17.6–29.8</i>	<i>38.4–55.3</i>
Sex					
Males	% of people	28.7	14.6	27.7	57.1
	<i>95% CI</i>	<i>23.1–35.1</i>	<i>8.1–24.9</i>	<i>18.8–38.7</i>	<i>46.3–67.3</i>
Females	% of people	19.2	8.5	18.3	37.3
	<i>95% CI</i>	<i>14.8–24.5</i>	<i>3.5–19.1</i>	<i>12.2–26.4</i>	<i>27.7–47.9</i>
Residential location					
Capital city	% of people	14.2	2.0	18.3	31.0
	<i>95% CI</i>	<i>10.6–18.9</i>	<i>0.4–8.8</i>	<i>10.4–30.1</i>	<i>21.3–42.8</i>
Other places	% of people	32.6	20.9	27.4	58.7
	<i>95% CI</i>	<i>25.6–40.5</i>	<i>11.7–34.4</i>	<i>20.2–35.9</i>	<i>46.1–70.2</i>
Postcode socioeconomic status					
Lowest	% of people	27.1	13.4	18.8	52.9
	<i>95% CI</i>	<i>17.2–39.8</i>	<i>3.6–39.5</i>	<i>10.4–31.5</i>	<i>37.7–67.5</i>
Middle	% of people	28.3	13.7	30.0	52.7
	<i>95% CI</i>	<i>22.8–34.6</i>	<i>7.3–24.2</i>	<i>20.1–42.3</i>	<i>37.2–67.7</i>
Highest	% of people	17.8	8.8	20.3	33.2
	<i>95% CI</i>	<i>11.3–26.7</i>	<i>2.4–27.1</i>	<i>12.1–31.9</i>	<i>20.5–48.8</i>
Government health card					
Health care card or pensioner concession card	% of people	30.8	13.1	20.8	51.9
	<i>95% CI</i>	<i>22.5–40.7</i>	<i>3.6–37.9</i>	<i>11.9–34.0</i>	<i>41.2–62.4</i>
Neither card	% of people	21.9	10.9	23.7	42.8
	<i>95% CI</i>	<i>18.0–26.2</i>	<i>5.8–19.7</i>	<i>17.7–30.9</i>	<i>33.1–53.1</i>
Place of last dental visit					
Cardholder/Public	% of people	33.2	12.9	32.2	58.3
	<i>95% CI</i>	<i>19.6–50.3</i>	<i>3.6–36.7</i>	<i>15.8–54.6</i>	<i>40.2–74.3</i>
Cardholder/Non-public	% of people	28.4	13.3	5.6	47.4
	<i>95% CI</i>	<i>19.0–40.2</i>	<i>1.8–55.9</i>	<i>1.3–20.7</i>	<i>34.2–60.9</i>
Non-cardholder/Non-public	% of people	21.9	10.9	23.7	42.8
	<i>95% CI</i>	<i>18.0–26.2</i>	<i>5.8–19.7</i>	<i>17.7–30.9</i>	<i>33.1–53.1</i>
Dental insurance					
Insured	% of people	20.4	5.4	21.5	38.6
	<i>95% CI</i>	<i>14.9–27.2</i>	<i>1.5–17.8</i>	<i>13.6–32.2</i>	<i>27.9–50.5</i>
Uninsured	% of people	29.8	18.2	26.7	55.3
	<i>95% CI</i>	<i>23.8–36.5</i>	<i>10.5–29.7</i>	<i>18.7–36.6</i>	<i>44.6–65.4</i>

(a) 95% CI = 95% confidence interval for estimated percentage.

Prevalence of deep pocket depth

Deep periodontal pockets have been defined as 4 mm or more. The depth of the pocket, measured in millimetres using a periodontal probe, is an indication of the severity of the destructive process. In Queensland, a total of 17.3% of the dentate adult population had at least one site with periodontal pocket depth of 4 mm or more (Table 14), which was lower, but not significantly, than the national estimate of 19.8% (Slade et al. 2007).

Key findings

- There was a tendency that the prevalence of deep periodontal pocket increased with age, with the oldest age group recording the highest prevalence of the condition. However, the difference between age groups did not reach statistical significance.
- The prevalence of deep periodontal pockets was higher among males than females, and among people living in places other than the capital city compared with those residing in Brisbane. However, the differences were not statistically significant.
- People who did not have private dental insurance had a higher prevalence of deep periodontal pocket than the insured. This difference was significant in the youngest age group.

Discussion

The depth of periodontal pockets reflects a more current activity of periodontal inflammation. This activity may be more dependent on oral hygiene status, which was found to not vary widely between groups.

In summary, there was a tendency of higher prevalence of deep periodontal pocket among people who were in lower socioeconomic position.

Table 14: Percentage of people with 4+ mm periodontal pocket depth

		Population: dentate people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	17.3	11.6	17.3	27.0
	95% CI ^(a)	12.7–23.1	5.2–23.7	12.6–23.2	20.1–35.2
Sex					
Males	% of people	20.8	16.7	18.8	32.0
	95% CI	14.4–29.1	7.3–33.9	12.3–27.6	23.2–42.2
Females	% of people	13.6	5.9	15.7	22.5
	95% CI	9.7–18.6	2.2–14.8	9.5–24.8	14.7–32.8
Residential location					
Capital city	% of people	10.6	2.6	13.2	21.5
	95% CI	6.8–16.1	0.4–13.9	7.5–22.2	14.0–31.6
Other places	% of people	23.1	20.1	20.8	31.1
	95% CI	15.5–33.0	8.5–40.6	14.0–29.8	20.8–43.9
Postcode socioeconomic status					
Lowest	% of people	13.8	8.5	13.4	20.3
	95% CI	6.9–25.6	2.5–25.0	5.7–28.1	10.0–36.9
Middle	% of people	19.4	8.5	21.6	36.3
	95% CI	14.0–26.3	3.1–21.0	14.4–30.9	26.3–47.6
Highest	% of people	17.9	16.0	16.5	25.0
	95% CI	9.5–31.3	4.4–44.1	9.7–26.6	15.4–37.9
Government health card					
Health care card or pensioner concession card	% of people	17.3	7.8	16.6	25.8
	95% CI	11.8–24.5	2.6–20.9	8.4–30.4	17.5–36.3
Neither card	% of people	17.2	12.3	17.5	27.9
	95% CI	12.1–23.9	4.8–28.2	12.2–24.5	19.4–38.3
Place of last dental visit					
Cardholder/Public	% of people	20.1	12.9	21.4	27.8
	95% CI	11.5–33.0	3.6–36.7	9.1–42.5	16.8–42.3
Cardholder/Non-public	% of people	14.3	1.0	10.3	24.4
	95% CI	8.1–23.9	0.1–7.5	2.2–37.3	14.0–39.1
Non-cardholder/Non-public	% of people	17.2	12.3	17.5	27.9
	95% CI	12.1–23.9	4.8–28.2	12.2–24.5	19.4–38.3
Dental insurance					
Insured	% of people	13.9	2.0	15.9	26.7
	95% CI	10.0–19.2	0.6–6.7	9.7–24.9	18.8–36.5
Uninsured	% of people	22.0	20.5	20.1	27.5
	95% CI	14.8–31.4	9.3–39.5	13.7–28.6	19.3–37.5

(a) 95% CI = 95% confidence interval for estimated percentage.

Prevalence of 4+ mm clinical attachment loss

Clinical attachment loss (CAL) is the loss of supporting periodontal structure around the tooth. Attachment may be lost through gum recession or the development of periodontal pockets from the inflammatory disease periodontitis. In NSAOH, CAL was measured using a combination of gum recession and periodontal probing depth on three sites per tooth. In Queensland, a total of 37.3% of dentate adults had at least one site with 4 mm or more CAL (Table 15), which was lower, but not significantly, than the national estimate of 42.5% (Slade et al. 2007).

Key findings

- The prevalence of 4+ mm CAL was strongly associated with age in Queensland, being 16.5% in 15–34-year-old adults but affecting 40.8% of middle-aged adults and 67.5% of those aged 55 years or more.
- There was a tendency that males had higher prevalence of CAL of 4+ mm compared with females; however, the difference was not statistically significant.
- People who lived in places other than the capital city were significantly more likely to have the condition compared with people living in Brisbane.
- There was a tendency of higher prevalence of CAL of 4+ mm among people with lower socioeconomic status; however, none of the differences reached statistical significance.

Discussion

Clinical attachment loss reflects an accumulation of activity of periodontal inflammation as well as a physiological process in the gums. Therefore, a strong age effect was observed. This condition was almost universal in certain groups of the oldest population. This strong age effect might confound the effect of other attributes depending on data structures within and between groups (for example, by residential location).

In summary, clinical attachment loss was highly prevalent in this population. It was more likely to occur in the older population and in people living in regional areas.

Table 15: Percentage of people with 4+ mm clinical attachment loss

		Population: dentate people			
		Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	37.3	16.5	40.8	67.5
	<i>95% CI^(a)</i>	32.1–42.8	9.2–27.6	33.4–48.7	58.5–75.3
Sex					
Males	% of people	40.5	22.3	39.8	75.9
	<i>95% CI</i>	33.0–48.4	12.0–37.6	28.9–51.8	66.6–83.2
Females	% of people	34.0	10.2	41.8	59.9
	<i>95% CI</i>	28.2–40.4	4.5–21.2	32.8–51.5	47.7–70.9
Residential location					
Capital city	% of people	28.2	6.1	38.8	52.7
	<i>95% CI</i>	23.2–33.7	2.6–14.0	28.3–50.4	40.6–64.4
Other places	% of people	45.3	26.3	42.5	78.7
	<i>95% CI</i>	36.3–54.6	13.2–45.7	32.3–53.5	65.0–88.1
Postcode socioeconomic status					
Lowest	% of people	37.8	13.8	37.7	64.7
	<i>95% CI</i>	26.0–51.3	3.7–39.9	24.7–52.8	46.4–79.5
Middle	% of people	43.3	16.0	51.2	81.1
	<i>95% CI</i>	36.1–50.7	8.9–27.2	36.9–65.2	66.7–90.2
Highest	% of people	31.4	18.4	33.7	56.3
	<i>95% CI</i>	22.9–41.4	6.1–43.8	25.0–43.6	43.3–68.5
Government health card					
Health care card or pensioner concession card	% of people	45.8	14.7	37.4	77.6
	<i>95% CI</i>	35.9–56.0	4.3–39.6	24.3–52.7	66.8–85.6
Neither card	% of people	34.7	16.7	41.6	59.8
	<i>95% CI</i>	29.3–40.5	8.5–30.4	33.7–49.9	48.9–69.8
Place of last dental visit					
Cardholder/Public	% of people	45.7	12.9	45.2	85.5
	<i>95% CI</i>	29.5–63.0	3.6–36.7	24.3–67.9	68.1–94.2
Cardholder/Non-public	% of people	45.9	17.0	27.0	72.0
	<i>95% CI</i>	33.7–58.6	3.6–53.2	11.0–52.4	56.3–83.8
Non-cardholder/Non-public	% of people	34.7	16.7	41.6	59.8
	<i>95% CI</i>	29.3–40.5	8.5–30.4	33.7–49.9	48.9–69.8
Dental insurance					
Insured	% of people	34.5	8.6	39.0	61.6
	<i>95% CI</i>	27.8–41.9	3.2–20.9	30.3–48.5	48.7–73.1
Uninsured	% of people	43.2	25.0	45.3	73.1
	<i>95% CI</i>	35.8–51.0	13.2–42.2	35.2–55.9	62.0–81.8

(a) 95% CI = 95% confidence interval for estimated percentage.

Prevalence of gingival inflammation

The gingival index is a measure of gingivitis, inflammation of the gums. Gingivitis occurs as a response to the bacteria in plaque accumulation near the gum line. In NSAOH, gingivitis was assessed on six index teeth. A gingival index score of 2 or more indicated bleeding on probing or spontaneous bleeding, and was classified as indicating gingival inflammation (gingivitis). In Queensland, a total of 24.7% of the dentate adult population had at least one site with a gingival score of 2 or more (Table 16), which was higher, but not significantly, than the national estimate of 19.7% (Slade et al. 2007).

Key findings

- There was a similar rate of gingival inflammation in all age groups.
- Males were more likely to have gingival inflammation compared with females. The difference reached statistical significance in the oldest age group.
- There was a tendency that people in lower socioeconomic position were more likely to have gingival inflammation; however, the differences were not statistically significant.

Discussion

Gingival inflammation is a condition observed in people of all ages at a similar rate. There was a tendency that people with lower socioeconomic status had higher prevalence of gingival inflammation. However, some differences were small and relatively low numbers of people in each population group made the confidence interval wide, overlapping between most groups.

In summary, gingival inflammation was more likely to affect males and people with lower socioeconomic status.

Table 16: Percentage of people with gingival inflammation

		Population: dentate people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	24.7	22.9	25.7	26.2
	<i>95% CI^(a)</i>	19.5–30.7	14.7–33.7	19.7–32.9	20.0–33.6
Sex					
Males	% of people	29.0	27.5	27.2	35.2
	<i>95% CI</i>	22.0–37.3	15.9–43.2	18.2–38.6	26.4–45.2
Females	% of people	20.2	17.8	24.2	18.0
	<i>95% CI</i>	14.8–26.9	9.8–30.4	17.5–32.4	12.0–26.2
Residential location					
Capital city	% of people	28.3	25.8	30.1	29.9
	<i>95% CI</i>	20.0–38.4	14.9–40.9	20.7–41.6	19.6–42.8
Other places	% of people	21.6	20.0	21.9	23.4
	<i>95% CI</i>	15.7–28.9	9.8–36.5	14.8–31.1	16.4–32.4
Postcode socioeconomic status					
Lowest	% of people	20.8	24.9	15.4	23.3
	<i>95% CI</i>	13.1–31.5	9.5–51.2	7.6–28.7	13.0–38.3
Middle	% of people	22.2	17.7	25.7	25.0
	<i>95% CI</i>	14.8–32.1	8.2–34.0	17.5–36.0	15.7–37.5
Highest	% of people	30.0	26.2	33.9	31.0
	<i>95% CI</i>	20.7–41.3	13.6–44.3	23.2–46.6	21.3–42.7
Government health card					
Health care card or pensioner concession card	% of people	35.3	45.8	28.4	30.2
	<i>95% CI</i>	26.0–45.9	26.5–66.4	15.3–46.5	19.9–42.9
Neither card	% of people	21.5	16.7	25.4	23.2
	<i>95% CI</i>	16.1–28.1	9.6–27.5	18.7–33.4	16.9–31.1
Place of last dental visit					
Cardholder/Public	% of people	36.6	46.5	18.6	38.8
	<i>95% CI</i>	24.3–50.8	22.6–72.2	8.7–35.5	23.5–56.7
Cardholder/Non-public	% of people	34.1	44.9	41.4	24.1
	<i>95% CI</i>	22.2–48.3	17.9–75.2	16.2–72.0	14.5–37.4
Non-cardholder/Non-public	% of people	21.5	16.7	25.4	23.2
	<i>95% CI</i>	16.1–28.1	9.6–27.5	18.7–33.4	16.9–31.1
Dental insurance					
Insured	% of people	22.0	20.0	25.7	18.6
	<i>95% CI</i>	15.5–30.2	9.7–36.7	16.7–37.2	11.9–28.1
Uninsured	% of people	28.1	25.4	27.3	34.1
	<i>95% CI</i>	21.8–35.3	14.7–40.2	19.2–37.3	24.5–45.2

(a) 95% CI = 95% confidence interval for estimated percentage.

4 Oral health care

Dental attendance within the preceding 12 months

Time since last visiting a dentist is a key indicator of access to dental care. In NSAOH, the time since last dental visit was assessed in the interview by asking, 'How long ago did you last see a dental professional about your teeth, dentures or gums?'. Five responses were possible including 'Less than 12 months.' In Queensland, nearly 6 out of 10 (58.5%) people aged 15 years or more had visited a dentist within the last 12 months (Table 17). This estimate was not significantly different from the national estimate of 59.4% (Slade et al. 2007).

Key findings

- Adults aged 35–54 years were most likely to have visited a dentist within the last 12 months (62.8%), while young adults reported the lowest (53.6%).
- There were similar percentages of males and females (56.0% versus 61.1%). Slightly larger differences between gender groups were observed for adults aged 35–54 years and 55 years or more.
- People living in Brisbane were more likely to report recently visiting than those living in the rest of Queensland (62.7% versus 55.0%). Within age groups, the percentage was higher for Brisbane residents aged 55 years or more (66.1%) compared with those living in the rest of Queensland (54.5%), although this difference was not statistically significant.
- The percentage was higher for people living in high socioeconomic postcodes than those from low socioeconomic postcodes (62.5% versus 53.3%) although this difference was not statistically significant. Within age groups, the largest difference between the highest and lowest socioeconomic postcodes was observed for people aged 55 years or more (72.4% versus 48.8%).
- Government health cardholders were less likely to have visited a dentist in the last 12 months than non-cardholders (49.2% versus 61.7%). The largest difference occurred in the 55 years or more age group, with 48.8% of cardholders reporting they had recently visited compared with 69.4% of non-cardholders.
- Among people who had a government health card, the percentage was higher for those who last attended a private practice than those who attended a public practice (57.4% versus 38.0%). This difference was mainly attributable to people aged 15–34 years, with those attending a private practice 2.6 times more likely to have recently visited than those attending a public practice.
- Insured people were much more likely to have recently visited a dentist than uninsured people (71.2% versus 48.0%). Significant differences were evident in all age groups, particularly for insured people aged 55 years or more.

Discussion

Nearly 6 out of 10 Queensland residents had visited a dentist within the preceding 12 months. Being insured, last visiting a private practice, not having a government health card and residing in the metropolitan area were all associated with recent dental visiting. Differences in visiting behaviour between population groups were most evident for people aged 55 years or more.

Table 17: Percentage of people visiting dentist within last 12 months

		Population: all people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	58.5	53.6	62.8	59.4
	<i>95% CI^(a)</i>	<i>55.9–61.1</i>	<i>48.9–58.2</i>	<i>58.9–66.5</i>	<i>55.0–63.6</i>
Sex					
Males	% of people	56.0	53.7	58.7	55.5
	<i>95% CI</i>	<i>52.1–59.7</i>	<i>46.1–61.1</i>	<i>52.6–64.5</i>	<i>49.2–61.7</i>
Females	% of people	61.1	53.5	66.8	63.0
	<i>95% CI</i>	<i>58.1–64.0</i>	<i>47.4–59.5</i>	<i>62.8–70.6</i>	<i>57.9–67.8</i>
Residential location					
Capital city	% of people	62.7	57.9	65.2	66.1
	<i>95% CI</i>	<i>58.6–66.7</i>	<i>52.1–63.5</i>	<i>59.0–71.0</i>	<i>59.2–72.3</i>
Other places	% of people	55.0	49.4	60.7	54.5
	<i>95% CI</i>	<i>51.6–58.4</i>	<i>42.1–56.7</i>	<i>55.8–65.4</i>	<i>49.0–59.9</i>
Postcode socioeconomic status					
Lowest	% of people	53.3	52.1	59.1	48.8
	<i>95% CI</i>	<i>49.0–57.5</i>	<i>43.6–60.5</i>	<i>52.2–65.6</i>	<i>43.3–54.3</i>
Middle	% of people	59.4	55.5	62.5	59.5
	<i>95% CI</i>	<i>56.4–62.2</i>	<i>48.2–62.6</i>	<i>58.1–66.7</i>	<i>53.5–65.2</i>
Highest	% of people	62.5	53.0	66.4	72.4
	<i>95% CI</i>	<i>56.7–68.0</i>	<i>44.7–61.1</i>	<i>57.5–74.3</i>	<i>65.3–78.6</i>
Government health card					
Health care card or pensioner concession card	% of people	49.2	46.7	53.6	48.8
	<i>95% CI</i>	<i>44.8–53.7</i>	<i>36.6–57.1</i>	<i>43.0–63.9</i>	<i>42.7–54.9</i>
Neither card	% of people	61.7	54.9	64.3	69.4
	<i>95% CI</i>	<i>58.3–64.9</i>	<i>49.2–60.5</i>	<i>60.2–68.2</i>	<i>64.3–74.2</i>
Place of last dental visit					
Cardholder/Public	% of people	38.0	26.5	55.1	37.4
	<i>95% CI</i>	<i>30.8–45.7</i>	<i>14.8–42.8</i>	<i>39.8–69.4</i>	<i>27.7–48.2</i>
Cardholder/Non-public	% of people	57.4	69.5	52.3	55.1
	<i>95% CI</i>	<i>51.6–63.0</i>	<i>57.9–79.0</i>	<i>37.1–67.1</i>	<i>47.9–62.2</i>
Non-cardholder/Non-public	% of people	61.7	54.9	64.3	69.4
	<i>95% CI</i>	<i>58.3–64.9</i>	<i>49.2–60.5</i>	<i>60.2–68.2</i>	<i>64.3–74.2</i>
Dental insurance					
Insured	% of people	71.2	63.2	73.0	76.3
	<i>95% CI</i>	<i>67.3–74.8</i>	<i>55.0–70.7</i>	<i>67.8–77.7</i>	<i>71.0–81.0</i>
Uninsured	% of people	48.0	46.7	52.1	45.3
	<i>95% CI</i>	<i>44.1–51.9</i>	<i>39.1–54.4</i>	<i>45.8–58.2</i>	<i>39.8–50.9</i>

(a) 95% CI = 95% confidence interval for estimated percentage.

Attendance at private dental practice

While most Australians obtain dental care at private dental practices, alternatives exist in the public sector for targeted population groups. The two largest public programs are school dental services targeted to children; and adult public programs provided through dental hospitals, community health centres and regional facilities and targeted to adults holding a government concession card. In NSAOH, people were asked, 'Where did you make your last dental visit?' and seven responses were offered. People who reported having visited a general dental practice, a specialist dental practice or a dental clinic associated with a health insurance fund were classified as having attended a private dental practice. In Queensland, 79.1% of people aged 15 years or more attended a private practice at their last dental visit (Table 18), significantly lower than the national estimate of 83.1% (Slade et al. 2007).

Key findings

- Adults aged 35–54 years were more likely to have visited a private dental practice at their last dental visit (87.8%) than younger (73.9%) or older (74.9%) adults.
- The percentage was similar for males and females (79.5% versus 78.8%). Within age groups, differences by gender were also small.
- The percentage did not differ significantly between Brisbane and the rest of Queensland (82.5% versus 76.3%). The largest difference between Brisbane and other residents was observed in the youngest age group (79.0% versus 69.0%).
- Residents living in high socioeconomic postcodes were more likely to have visited a private practice (86.0%) than those living in postcodes of low socioeconomic status (71.2%). This pattern was evident in all age groups, particularly for young adults (82.0% versus 60.3%).
- Despite having a government health card, 52.5% of cardholders reported they visited a private practice at their last dental visit. There was some variation among cardholders, with the percentage being highest for those aged 55 years (56.3%). For adults who did not have a government health card, the percentage was lower for those aged 15–34 years than older adults.
- Insured people were far more likely to have visited a private practice than those without dental insurance (92.3% versus 70.3%). Significant differences by insurance status were evident in all age groups.

Discussion

Nearly 8 out of 10 Queensland residents visited a private practice at their last dental visit, with adults aged 35–54 years having the highest percentage (87.8%). Having dental insurance and living in areas of high socioeconomic status were associated with private visiting. Despite having a government health card, just over 1 out of 2 cardholders last attended a private practice.

In summary, socioeconomic status was only moderately associated with private visiting. This is most likely due to adults who have a government health card electing to attend a private practice due to the long public waiting lists.

Table 18: Percentage of people who attended a private dental practice at last dental visit

		Population: all people			
		Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	79.1	73.9	87.8	74.9
	95% CI ^(a)	76.5–81.6	68.8–78.4	84.6–90.4	71.0–78.3
Sex					
Males	% of people	79.5	73.3	87.6	77.3
	95% CI	75.4–83.1	63.7–81.1	82.9–91.1	71.6–82.0
Females	% of people	78.8	74.5	88.0	72.6
	95% CI	75.6–81.6	68.6–79.5	84.4–90.9	67.5–77.2
Residential location					
Capital city	% of people	82.5	79.0	90.0	77.6
	95% CI	79.0–85.5	72.7–84.1	85.6–93.1	71.0–83.0
Other places	% of people	76.3	69.0	86.0	72.9
	95% CI	72.3–79.8	60.8–76.0	81.1–89.8	68.1–77.1
Postcode socioeconomic status					
Lowest	% of people	71.2	60.3	83.5	69.5
	95% CI	65.9–76.1	50.4–69.5	76.8–88.5	63.8–74.6
Middle	% of people	79.5	75.9	86.2	74.1
	95% CI	76.0–82.6	65.8–83.7	81.2–90.0	67.9–79.5
Highest	% of people	86.0	82.0	93.6	82.3
	95% CI	83.5–88.2	76.9–86.1	88.5–96.5	74.9–87.9
Government health card					
Health care card or pensioner concession card	% of people	52.5	44.3	51.7	56.3
	95% CI	46.5–58.4	30.9–58.5	40.8–62.4	50.3–62.1
Neither card	% of people	88.3	80.4	93.6	92.5
	95% CI	86.2–90.0	75.9–84.3	90.9–95.5	88.8–95.1
Dental insurance					
Insured	% of people	92.3	89.3	95.6	90.5
	95% CI	90.0–94.0	82.4–93.7	92.8–97.3	86.4–93.4
Uninsured	% of people	70.3	69.2	79.4	61.8
	95% CI	66.5–73.8	61.7–75.8	74.3–83.7	57.0–66.3

(a) 95% CI = 95% confidence interval for estimated percentage.

Payments by patients for dental care

While the place of last dental visit was dominated by private practice, some visits made to private dentists are paid for by public funds. In order to identify such visits, NSAOH participants who have a government health card and who had visited a dentist within the last 5 years were asked 'Did the government or an insurance fund pay any part of the expense for your last dental visit?'. A number of response options were available including 'Paid all own expenses', 'Insurance paid some – patient paid some', 'Insurance paid all', 'Government paid some – patient paid some' and 'Government paid all'. People who reported one of the first three payment mechanisms were classified as having paid for their care, together with people who were non-government health cardholders and had visited within the last 5 years. In Queensland, 90.7% of people aged 15 years or more who had seen a dentist within the preceding 5 years paid for that visit (Table 19). This estimate was not significantly different from, the national estimate of 91.4% (Slade et al. 2007).

Key findings

- Queensland residents aged 55 years or more were less likely to have paid for their last dental visit (83.4%) than younger residents.
- Males and females who had seen a dentist within the preceding 5 years had similar percentage (91.1% versus 90.4%). Within age groups, differences between males and females remained small.
- Similarly, residential location showed no association, with 92.5% of capital city residents paying for their last dental visit compared with 89.1% of residents living outside the Brisbane metropolitan area.
- Residents of high socioeconomic postcodes were more likely (95.0%) than those living in low socioeconomic postcodes (85.1%) to have paid for their last dental visit. This pattern was consistent within age groups although differences were only significant for those aged 55 years or more.
- Despite having a government health card, 59.2% of cardholders who visited a dentist within the preceding 5 years paid for their last dental visit. Within that group, the figure was 63.1% for people aged 55 years or more, which may be due to older adults electing to attend a private practice due to long waiting lists in public dental care.
- Almost 100% of people with dental insurance paid for their last dental visit compared with 82.5% of uninsured people. Within the uninsured population, those aged 55 years or more reported the lowest percentage (67.8%).

Discussion

The majority of adults who had a government health card paid for their own dental care. This may be due to long waiting lists for public dental services.

Table 19: Percentage of people who paid for their last dental visit

		Population: people who visited dentist within last 5 years			
		Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	90.7	93.4	93.6	83.4
	95% CI ^(a)	88.8–92.3	90.4–95.6	91.3–95.3	79.8–86.5
Sex					
Males	% of people	91.1	94.4	92.8	84.6
	95% CI	88.4–93.2	89.2–97.2	89.2–95.2	79.3–88.8
Females	% of people	90.4	92.5	94.4	82.3
	95% CI	88.0–92.3	87.8–95.5	91.8–96.2	77.6–86.1
Residential location					
Capital city	% of people	92.5	94.3	95.3	86.2
	95% CI	90.0–94.5	90.0–96.8	91.7–97.4	80.7–90.3
Other places	% of people	89.1	92.6	92.2	81.3
	95% CI	86.2–91.5	87.6–95.6	88.8–94.6	76.3–85.4
Postcode socioeconomic status					
Lowest	% of people	85.1	88.5	89.5	77.2
	95% CI	81.8–87.9	81.4–93.2	85.0–92.7	71.3–82.1
Middle	% of people	91.3	94.2	94.2	83.0
	95% CI	88.3–93.6	88.4–97.2	90.4–96.5	76.8–87.9
Highest	% of people	95.0	96.2	96.5	90.9
	95% CI	92.9–96.5	91.4–98.4	91.9–98.6	85.7–94.4
Government health card					
Health care card or pensioner concession card	% of people	59.2	57.2	51.4	63.1
	95% CI	52.9–65.3	40.5–72.4	41.2–61.5	56.8–69.0
Neither card	% of people	100.0	100.0	100.0	100.0
	95% CI	—	—	—	—
Place of last dental visit					
Cardholder/Public	% of people	2.8	6.1	1.4	1.9
	95% CI	0.9–8.2	0.8–33.7	0.2–9.3	0.6–6.0
Cardholder/Non-public	% of people	97.3	94.3	97.1	98.5
	95% CI	95.0–98.5	85.6–97.9	89.6–99.2	94.9–99.5
Non-cardholder/Non-public	% of people	100.0	100.0	100.0	100.0
	95% CI	—	—	—	—
Dental insurance					
Insured	% of people	99.3	100.0	99.3	98.7
	95% CI	98.7–99.6	—	98.0–99.8	97.0–99.4
Uninsured	% of people	82.5	88.9	86.9	67.8
	95% CI	79.1–85.4	83.4–92.7	82.4–90.3	62.6–72.6

(a) 95% CI = 95% confidence interval for estimated percentage.

Government-subsidised dental care in private sector

In some states and territories, public-sector dental programs provide care to people eligible for their services by referring them to private practitioner dentists. The cost of such care is then subsidised by the state or territory dental program. In Queensland, 0.7% of the adult population received state-subsidised dental care in the private sector (Table 20). This statistic was not reported nationally.

- The percentage was greater among people aged less than 35 years than in other age groups, although the difference was statistically significant only in comparison with 35-54-year-olds.
- The percentage was greater in Brisbane than the rest of the state, and this difference was statistically significant for people aged less than 35 years.
- Within the group of people who had a government health card, 3.2% received state-subsidised dental care in private practice, and the same -age-related pattern was observed within that group.
- People with dental insurance did not receive state-subsidised dental care in private practice.

Discussion

In Queensland, state-subsidised dental care in private practice was provided primarily to younger adults. Variation in this statistic according to dental insurance status reflected similar variation in the distribution of people who were eligible for state dental services.

Table 20: Percentage of people who received government-subsidised dental care in private sector

		Population: people who visited dentist within last 5 years			
		Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	0.7	1.9	0.1	0.2
	<i>95% CI^(a)</i>	<i>0.4–1.4</i>	<i>0.9–3.8</i>	<i>0.0–0.7</i>	<i>0.0–1.2</i>
Sex					
Males	% of people	0.7	1.6	0.2	0.1
	<i>95% CI</i>	<i>0.2–1.9</i>	<i>0.5–5.2</i>	<i>0.0–1.5</i>	<i>0.0–0.9</i>
Females	% of people	0.8	2.1	0.0	0.2
	<i>95% CI</i>	<i>0.3–1.9</i>	<i>0.8–5.5</i>	—	<i>0.0–1.4</i>
Residential location					
Capital city	% of people	1.3	3.5	0.0	0.0
	<i>95% CI</i>	<i>0.6–2.7</i>	<i>1.7–7.4</i>	—	—
Other places	% of people	0.2	0.2	0.2	0.3
	<i>95% CI</i>	<i>0.1–0.7</i>	<i>0.0–1.6</i>	<i>0.0–1.3</i>	<i>0.0–2.1</i>
Postcode socioeconomic status					
Lowest	% of people	0.9	2.3	0.0	0.5
	<i>95% CI</i>	<i>0.3–2.8</i>	<i>0.6–9.0</i>	—	<i>0.1–3.3</i>
Middle	% of people	0.4	0.9	0.3	0.0
	<i>95% CI</i>	<i>0.1–1.2</i>	<i>0.2–3.3</i>	<i>0.0–1.8</i>	—
Highest	% of people	1.0	2.5	0.0	0.0
	<i>95% CI</i>	<i>0.4–2.6</i>	<i>0.9–6.8</i>	—	—
Government health card					
Health care card or pensioner concession card	% of people	3.2	12.1	0.8	0.4
	<i>95% CI</i>	<i>1.7–6.1</i>	<i>5.7–23.8</i>	<i>0.1–5.3</i>	<i>0.1–2.7</i>
Neither card	% of people	0.0	0.0	0.0	0.0
	<i>95% CI</i>	—	—	—	—
Dental insurance					
Insured	% of people	0.0	0.0	0.0	0.0
	<i>95% CI</i>	—	—	—	—
Uninsured	% of people	1.3	2.8	0.2	0.3
	<i>95% CI</i>	<i>0.6–2.6</i>	<i>1.2–6.3</i>	<i>0.0–1.6</i>	<i>0.0–2.4</i>

(a) 95% CI = 95% confidence interval for estimated percentage.

People's usual pattern of dental visits

While time since last visiting a dentist provides a snapshot of dental visiting behaviour, people's usual dental attendance pattern reflects longer term behaviours and intentions. In NSAOH, people who were dentate were asked 'How often on average do you seek care from a dental professional?' and four categories of response were offered. In Queensland, 50.5% of people aged 15 years or more usually visit a dentist at least once a year (Table 21). This estimate was not significantly different from the national estimate of 53.1% (Slade et al. 2007).

Key findings

- Queensland residents aged 55 years or more were more likely than younger age groups to attend annually, although this was not significantly different from younger age groups.
- The percentage was higher for females than males (56.9% versus 44.0%). This pattern was consistent within each age group, with significant differences observed in the 35–54 years and 55 years or more age groups.
- Brisbane residents were more likely than other Queensland residents to usually visit one or more times a year (56.0% versus 45.6%). Within age groups, the only significant difference by residential location occurred in the 55 years or more age group (66.8% versus 48.8%).
- Socioeconomic status was strongly associated with dental visiting behaviour, with the percentage being greater in high socioeconomic postcodes than in low socioeconomic postcodes (57.3% versus 40.5%). This difference was mainly attributable to the 55 years or more age group (74.5% versus 41.2%).
- Residents who had a government health card were less likely to usually visit a dentist one or more times a year than those who did not (40.4% versus 53.3%). Differences by cardholder status were evident within each age group, with significant differences observed for those aged 35–54 years (29.5% versus 50.6%) and 55 years or more (47.7% versus 64.1%).
- Among government health cardholders, those who had visited a private practice at their last dental visit were nearly three times as likely to frequently visit as those who attended a public practice (55.6% versus 19.8%). In the 15–34 years age group, the difference was four-fold (60.3% versus 15.3%).
- Insured people were far more likely to usually visit a dentist one or more times a year than uninsured people (69.6% versus 34.4%). Large differences by insurance status were evident in all age groups.

Discussion

Just over half of Queensland residents aged 15 years or more usually visit the dentist at least once a year. Being female, residing in the metropolitan region, living in areas of high socioeconomic status, being non-government health cardholders, last visiting a private practice and having dental insurance were all associated with regular dental visiting. Large differences in visiting behaviour were observed between insured and uninsured groups and by location of last dental visit.

Table 21: Percentage of people who usually visit a dental professional at least once a year

		Population: dentate people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	50.5	48.9	47.7	56.9
	95% CI ^(a)	47.2–53.7	43.6–54.3	43.0–52.5	51.0–62.5
Sex					
Males	% of people	44.0	43.4	40.9	49.6
	95% CI	39.5–48.7	35.6–51.5	33.8–48.4	41.2–58.0
Females	% of people	56.9	54.6	54.4	63.9
	95% CI	53.3–60.4	47.4–61.7	48.9–59.8	58.1–69.3
Residential location					
Capital city	% of people	56.0	53.2	52.0	66.8
	95% CI	51.7–60.2	47.4–58.8	44.3–59.6	58.8–74.0
Other places	% of people	45.6	44.9	44.0	48.8
	95% CI	40.9–50.3	36.2–53.9	38.1–50.1	41.0–56.6
Postcode socioeconomic status					
Lowest	% of people	40.5	38.6	42.0	41.2
	95% CI	34.7–46.7	30.7–47.2	31.7–53.0	33.3–49.5
Middle	% of people	52.2	56.6	46.1	56.3
	95% CI	48.1–56.3	46.4–66.4	39.8–52.5	47.0–65.2
Highest	% of people	57.3	50.0	54.7	74.5
	95% CI	52.1–62.3	43.4–56.6	46.5–62.7	67.7–80.3
Government health card					
Health care card or pensioner concession card	% of people	40.4	36.4	29.5	47.7
	95% CI	35.2–45.8	26.0–48.3	20.2–40.9	40.3–55.2
Neither card	% of people	53.3	51.3	50.6	64.1
	95% CI	49.6–57.0	45.0–57.5	45.6–55.7	57.2–70.5
Place of last dental visit					
Cardholder/Public	% of people	19.8	15.3	20.5	23.4
	95% CI	14.5–26.4	6.6–31.5	11.2–34.4	16.3–32.4
Cardholder/Non-public	% of people	55.6	60.3	37.2	60.6
	95% CI	48.3–62.7	47.9–71.5	23.3–53.6	51.6–68.9
Non-cardholder/Non-public	% of people	53.3	51.3	50.6	64.1
	95% CI	49.6–57.0	45.0–57.5	45.6–55.7	57.2–70.5
Dental insurance					
Insured	% of people	69.6	68.0	66.7	75.7
	95% CI	65.1–73.7	57.9–76.7	60.8–72.1	69.4–81.0
Uninsured	% of people	34.4	37.3	28.8	37.5
	95% CI	31.1–37.8	30.2–44.9	23.1–35.2	31.7–43.7

(a) 95% CI = 95% confidence interval for estimated percentage.

Usual attendance at the same dentist

In NSAOH, usual source of care was assessed in the interview by asking people 'Is there a dentist you usually go to for dental care?'. People who answered 'yes, have a usual source of care' were classified as having a dentist they usually attend. In Queensland, 73.5% of the dentate population aged 15 years or more who visited a dentist within the last 5 years reported having a dentist they usually attend (Table 22), which was significantly lower than the national estimate of 78.6% (Slade et al. 2007).

Key findings

- Across age groups, the percentage who replied 'yes' to having a dentist they usually attend was significantly lower for those adults aged 15–34 years (65.7%) compared with those aged 35–54 years (78.2%) and 55 years or more (77.9%).
- There were no significant differences by sex.
- For all ages combined and among those aged 15–34 years, the percentage was greater in Brisbane than outside the capital city (80.4% versus 67.4% and 75.2% versus 56.6% respectively).
- People living in postcodes with low socioeconomic status were significantly less likely to report a usual source of care compared to those in postcodes with high socioeconomic status (64.2% versus 82.0%). Significant age-specific differences among those in low and high socioeconomic postcodes were found in the 35–54 years (72.2% versus 85.4%) and 55 years or more (65.5% versus 92.4%) age groups.
- Similarly, there was a significant difference between people in postcodes with middle socioeconomic status and those in postcodes with high socioeconomic status (73.0% versus 82.0%), with this difference mainly attributable to those aged 55 years or more (76.7% versus 92.4%).
- The percentage was significantly lower for adults who had a government health card than for those who did not (55.7% versus 78.2%). This pattern was consistent across all age groups.
- Within the population of government health cardholders, people whose last dental visit was to the public sector were significantly less likely to report having a dentist they usually attend than those who attended elsewhere (19.2% versus 78.2%). This pattern was consistent across all age groups, with the largest difference occurring in the 55 years or more age group (16.5% versus 87.3%).
- The percentage was significantly higher among adults with dental insurance than for those without (88.4% versus 60.6%). This pattern was consistent across all age groups.

Discussion

In summary, 73.5% of Queensland adults reported that they usually visit the same dentist. This type of visiting was more frequent among the older age groups, non-government health cardholders and those who were insured.

Choice of an individual dentist is not possible within most public dental clinics.

Table 22: Percentage of people who have a dentist they usually attend

		Population: dentate people who visited dentist within last 5 years			
		Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	73.5	65.7	78.2	77.9
	<i>95% CI^(a)</i>	<i>70.5–76.2</i>	<i>60.3–70.6</i>	<i>74.6–81.4</i>	<i>71.9–82.8</i>
Sex					
Males	% of people	71.0	62.9	75.2	76.7
	<i>95% CI</i>	<i>66.0–75.5</i>	<i>53.1–71.7</i>	<i>69.4–80.2</i>	<i>68.1–83.6</i>
Females	% of people	75.8	68.3	80.9	78.9
	<i>95% CI</i>	<i>72.8–78.6</i>	<i>61.2–74.7</i>	<i>76.7–84.5</i>	<i>72.4–84.2</i>
Residential location					
Capital city	% of people	80.4	75.2	82.8	84.9
	<i>95% CI</i>	<i>76.2–84.0</i>	<i>68.1–81.1</i>	<i>77.9–86.8</i>	<i>78.0–89.9</i>
Other places	% of people	67.4	56.6	74.1	72.1
	<i>95% CI</i>	<i>63.2–71.3</i>	<i>49.4–63.6</i>	<i>68.6–79.0</i>	<i>63.1–79.7</i>
Postcode socioeconomic status					
Lowest	% of people	64.2	54.8	72.2	65.5
	<i>95% CI</i>	<i>57.4–70.5</i>	<i>43.5–65.7</i>	<i>65.7–78.0</i>	<i>54.1–75.3</i>
Middle	% of people	73.0	66.7	76.3	76.7
	<i>95% CI</i>	<i>69.4–76.3</i>	<i>58.3–74.1</i>	<i>69.3–82.2</i>	<i>68.8–83.1</i>
Highest	% of people	82.0	72.8	85.4	92.4
	<i>95% CI</i>	<i>77.7–85.6</i>	<i>64.3–80.0</i>	<i>81.0–88.9</i>	<i>88.4–95.1</i>
Government health card					
Health care card or pensioner concession card	% of people	55.7	41.1	60.0	61.9
	<i>95% CI</i>	<i>48.9–62.3</i>	<i>28.7–54.8</i>	<i>49.2–69.9</i>	<i>53.7–69.5</i>
Neither card	% of people	78.2	70.1	80.9	89.2
	<i>95% CI</i>	<i>74.9–81.2</i>	<i>64.5–75.2</i>	<i>77.0–84.2</i>	<i>83.1–93.3</i>
Place of last dental visit					
Cardholder/public	% of people	19.2	13.9	30.0	16.5
	<i>95% CI</i>	<i>12.1–29.3</i>	<i>4.1–38.0</i>	<i>15.1–50.8</i>	<i>9.6–26.7</i>
Cardholder/Non-public	% of people	81.2	64.0	87.0	87.3
	<i>95% CI</i>	<i>75.5–85.9</i>	<i>52.6–74.0</i>	<i>74.8–93.7</i>	<i>80.1–92.2</i>
Non-cardholder/Non-public	% of people	78.2	70.1	80.9	89.2
	<i>95% CI</i>	<i>74.9–81.2</i>	<i>64.5–75.2</i>	<i>77.0–84.2</i>	<i>83.1–93.3</i>
Dental insurance					
Insured	% of people	88.4	83.0	88.8	93.3
	<i>95% CI</i>	<i>85.9–90.5</i>	<i>76.6–87.9</i>	<i>85.2–91.7</i>	<i>89.2–95.9</i>
Uninsured	% of people	60.6	56.6	65.7	59.9
	<i>95% CI</i>	<i>56.2–64.8</i>	<i>49.0–63.9</i>	<i>59.4–71.5</i>	<i>51.8–67.6</i>

(a) 95% CI = 95% confidence interval for estimated percentage.

Usual dental attendance for a check-up

In NSAOH, dentate people were asked 'Is your usual reason for visiting a dental professional for check-ups or when you have a dental problem?'. In Queensland, 52.4% of the adult dentate population reported usually visiting a dentist for a check-up (Table 23), which was slightly lower, but not significantly, than the national estimate of 56.2% (Slade et al. 2007).

Key findings

- Although a higher percentage of adults aged 55 years or more reported usually visiting for a check-up (56.9%) compared with those aged 15–34 years (54.1%) and 35–54 years (47.7%), differences between age groups were not statistically significant.
- The percentage was higher among females than males (57.1% versus 47.6%), with statistically significant differences observed in the 35–54 years (54.0% versus 41.3%) and 55 years or more (64.0% versus 49.5%) age groups.
- For all ages combined and among those aged 55 years or more, adults living in Brisbane were more likely to report usually visiting a dentist for a check-up than those living outside the capital city (59.3% versus 46.3% and 66.8% versus 48.8% respectively).
- The percentage was significantly lower for adults living in low socioeconomic postcodes (45.4%) than high socioeconomic postcodes (61.8%). Statistically significant differences were observed in the 35–54 years (43.1% versus 60.8%) and 55 years or more (46.7% versus 69.8%) age groups. For those aged 35–54 years, people living in postcodes with middle socioeconomic status were significantly less likely to report usually visiting for a check-up than those in postcodes with high socioeconomic status (40.1% versus 60.8%).
- For all ages combined and among those aged 35–54 years, the percentage was significantly lower for adults who had a government health card than for those who did not (42.7% versus 55.2% and 22.8% versus 51.7% respectively).
- Within the population of government health cardholders, people whose last dental visit was to the public sector were 2.5 times less likely to report usually visiting a dentist for a check-up than those who attended elsewhere (22.7% versus 57.6%). The relative difference was greatest in the 35–54 years age group (3.8% versus 39.5%) and smallest in the 55 years or more age group (32.8% versus 60.1%).
- The percentage was significantly higher among adults with dental insurance than for those without insurance (71.7% versus 34.9%). This pattern was consistent across all age groups.

Discussion

In summary, just over half the adult population usually visit the dentist for a check-up, with this percentage being higher for adults aged 55 years or more. Having dental insurance had the strongest association, with check-up visiting markedly more frequent among those with dental insurance. There was also significant association with sex, living in Brisbane, living in high socioeconomic postcodes and being non-government health cardholders.

Table 23: Percentage of people who usually visit a dentist for a check-up

		Population: dentate people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	52.4	54.1	47.7	56.9
	<i>95% CI^(a)</i>	<i>49.2–55.6</i>	<i>49.5–58.6</i>	<i>43.2–52.2</i>	<i>51.4–62.2</i>
Sex					
Males	% of people	47.6	52.6	41.3	49.5
	<i>95% CI</i>	<i>43.5–51.9</i>	<i>44.9–60.2</i>	<i>34.6–48.3</i>	<i>42.9–56.1</i>
Females	% of people	57.1	55.6	54.0	64.0
	<i>95% CI</i>	<i>53.2–60.9</i>	<i>48.1–62.8</i>	<i>48.7–59.1</i>	<i>57.7–69.8</i>
Residential location					
Capital city	% of people	59.3	59.4	54.4	66.8
	<i>95% CI</i>	<i>54.3–64.1</i>	<i>53.0–65.5</i>	<i>46.8–61.8</i>	<i>58.5–74.2</i>
Other places	% of people	46.3	49.0	41.9	48.8
	<i>95% CI</i>	<i>42.1–50.5</i>	<i>42.4–55.6</i>	<i>36.6–47.4</i>	<i>41.8–55.9</i>
Postcode socioeconomic status					
Lowest	% of people	45.4	46.7	43.1	46.7
	<i>95% CI</i>	<i>40.6–50.3</i>	<i>36.3–57.3</i>	<i>36.3–50.2</i>	<i>40.7–52.8</i>
Middle	% of people	49.0	55.5	40.1	55.2
	<i>95% CI</i>	<i>43.1–54.9</i>	<i>47.4–63.2</i>	<i>33.9–46.6</i>	<i>44.2–65.6</i>
Highest	% of people	61.8	58.3	60.8	69.8
	<i>95% CI</i>	<i>56.3–67.0</i>	<i>52.1–64.3</i>	<i>51.8–69.1</i>	<i>60.2–78.0</i>
Government health card					
Health care card or pensioner concession card	% of people	42.7	45.0	22.8	50.6
	<i>95% CI</i>	<i>37.2–48.5</i>	<i>30.3–60.7</i>	<i>15.3–32.5</i>	<i>44.2–57.1</i>
Neither card	% of people	55.2	55.8	51.7	61.8
	<i>95% CI</i>	<i>51.3–59.0</i>	<i>50.7–60.9</i>	<i>46.7–56.8</i>	<i>54.8–68.3</i>
Place of last dental visit					
Cardholder/Public	% of people	22.7	24.6	3.8	32.8
	<i>95% CI</i>	<i>16.4–30.6</i>	<i>11.8–44.2</i>	<i>1.4–9.7</i>	<i>23.8–43.3</i>
Cardholder/Non-public	% of people	57.6	68.1	39.5	60.1
	<i>95% CI</i>	<i>50.1–64.8</i>	<i>49.4–82.4</i>	<i>24.7–56.5</i>	<i>52.1–67.6</i>
Non-cardholder/Non-public	% of people	55.2	55.8	51.7	61.8
	<i>95% CI</i>	<i>51.3–59.0</i>	<i>50.7–60.9</i>	<i>46.7–56.8</i>	<i>54.8–68.3</i>
Dental insurance					
Insured	% of people	71.7	75.0	68.1	73.5
	<i>95% CI</i>	<i>67.5–75.5</i>	<i>65.9–82.3</i>	<i>62.1–73.5</i>	<i>66.8–79.3</i>
Uninsured	% of people	34.9	38.6	27.3	39.7
	<i>95% CI</i>	<i>31.5–38.5</i>	<i>32.2–45.3</i>	<i>22.7–32.4</i>	<i>33.8–46.0</i>

(a) 95% CI = 95% confidence interval for estimated percentage.

Dental care avoided or delayed due to cost

In NSAOH, cost as a barrier to receipt of dental care was assessed with the question 'During the last 12 months, have you avoided or delayed visiting a dental professional because of the cost?'. People who answered 'yes' were classified as having delayed or avoided dental care due to cost. In Queensland, they represented 31.5% of the population aged 15 years or more (Table 24), which was slightly higher, but not significantly, than the national estimate of 30.0% (Slade et al. 2007).

Key findings

- There was some variation in the percentage reporting cost as a barrier to receipt of dental care (35.3% of adults aged 15–34 years and 35.2% of those aged 35–54 years compared with 22.4% of those aged 55 years or more).
- The percentage was significantly higher among females than males (35.4% versus 27.6%). This pattern was consistent across all age groups although the differences within age groups were not statistically significant.
- For all ages combined and across all age groups, there was little variation in delayed or avoided care among groups classified by residential location. Percentages were lower for residents in Brisbane compared with other places (29.9% versus 32.9%).
- People living in postcodes with low socioeconomic status were more likely to report having avoided or delayed care due to cost than those in postcodes with high socioeconomic status (31.7% versus 28.6%) but this difference was not statistically significant. Statistically significant differences were observed, however, in the 55 years or more age group (26.1% versus 15.4%).
- The percentage was higher for adults who had a government health card than for those who did not (36.5% versus 30.0%) although this difference was not statistically significant. However, statistically significant differences between cardholders and non-cardholders were observed in the 35–54 years (55.4% versus 32.0%) and 55 years or more (29.9% versus 15.2%) age groups.
- Within the population of government health cardholders, the percentage reporting that they had avoided or delayed care due to cost was greater for people whose last dental visit was to the public sector than for those who attended elsewhere (42.9% versus 31.9%). Note that since 95% CIs were large in these groups, the differences observed were not statistically significant.
- The percentage was significantly higher among uninsured than insured adults (42.9% versus 19.3%). This pattern was consistent across all age groups.

Discussion

In summary, having avoided or delayed receipt of dental care due to cost was strongly associated with dental insurance status.

Table 24: Percentage of people who avoided or delayed dental care

		Population: all people			
		Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	31.5	35.3	35.2	22.4
	<i>95% CI^(a)</i>	28.9–34.3	29.7–41.4	31.3–39.3	19.6–25.5
Sex					
Males	% of people	27.6	28.8	30.8	21.8
	<i>95% CI</i>	24.1–31.3	21.9–36.9	25.0–37.4	17.4–26.9
Females	% of people	35.4	42.0	39.5	22.9
	<i>95% CI</i>	32.3–38.7	34.7–49.6	35.1–44.0	19.7–26.5
Residential location					
Capital city	% of people	29.9	33.8	33.1	20.4
	<i>95% CI</i>	25.8–34.5	25.9–42.7	27.6–39.0	15.8–25.8
Other places	% of people	32.9	36.8	37.0	23.9
	<i>95% CI</i>	29.7–36.2	28.9–45.4	31.7–42.6	20.5–27.6
Postcode socioeconomic status					
Lowest	% of people	31.7	33.7	35.7	26.1
	<i>95% CI</i>	28.5–35.2	24.6–44.2	29.4–42.6	22.1–30.5
Middle	% of people	34.2	40.5	35.5	24.6
	<i>95% CI</i>	29.4–39.3	29.6–52.4	28.6–43.0	20.1–29.6
Highest	% of people	28.6	32.1	34.4	15.4
	<i>95% CI</i>	24.0–33.7	23.8–41.6	28.2–41.1	11.1–21.0
Government health card					
Health care card or pensioner concession card	% of people	36.5	36.5	55.4	29.9
	<i>95% CI</i>	32.8–40.4	25.7–48.9	44.7–65.6	26.0–34.2
Neither card	% of people	30.0	35.5	32.0	15.2
	<i>95% CI</i>	27.1–33.1	29.9–41.7	27.9–36.4	11.6–19.8
Place of last dental visit					
Cardholder/Public	% of people	42.9	36.8	58.3	39.8
	<i>95% CI</i>	36.5–49.6	23.8–52.0	44.7–70.7	31.1–49.1
Cardholder/Non-public	% of people	31.9	36.2	52.9	24.5
	<i>95% CI</i>	26.9–37.3	20.5–55.5	36.1–69.0	19.5–30.3
Non-cardholder/Non-public	% of people	30.0	35.5	32.0	15.2
	<i>95% CI</i>	27.1–33.1	29.9–41.7	27.9–36.4	11.6–19.8
Dental insurance					
Insured	% of people	19.3	23.8	22.2	10.8
	<i>95% CI</i>	16.4–22.5	17.2–32.1	18.7–26.2	8.1–14.5
Uninsured	% of people	42.9	45.8	49.0	32.0
	<i>95% CI</i>	39.2–46.6	38.7–53.1	42.3–55.8	27.5–36.9

(a) 95% CI = 95% confidence interval for estimated percentage.

Recommended dental treatment foregone due to cost

In NSAOH, treatment foregone due to cost was assessed with the question 'Has the cost prevented you from having any dental treatment that was recommended during the last 2 years?'. People who answered 'yes' were classified as having foregone dental treatment due to cost. In Queensland, they represented 23.1% of the population aged 15 years or more (Table 25), which was higher, but not significantly, than the national estimate of 20.6% (Slade et al. 2007).

Key findings

- There was some variation in the percentage of people reporting that they had forgone recommended treatment due to cost, with a lower percentage in the oldest (55 years or more) age group (16.7%) compared with those aged 15–34 years (21.8%) and 35–54 years (29.1%).
- For all ages combined, a greater percentage of females reported that they had forgone treatment due to cost compared to males (23.7% versus 22.5%). However, this difference was not statistically significant. For each age group, there were no statistically significant differences between males and females.
- For people of all ages, there was little variation among groups classified by residential location.
- For all ages combined and across all age groups, percentages were similar among groups classified by postcode socioeconomic status.
- For all ages combined and across all age groups, the percentage of adults reporting that they had forgone recommended dental care due to cost was higher for adults who had a government health card than for those who did not.
- Within the population of government health cardholders, there was a tendency for the percentage to be greater among people whose last dental visit was to the public sector than for those who attended elsewhere (28.8% versus 20.0%). However, in the 15–34 years age group, a lower percentage of cardholders whose last dental visit was to the public sector reported that they had forgone recommended dental care due to cost compared with cardholders who attended elsewhere (15.9% versus 26.6%). Note that since 95% CIs were large in these groups, the differences observed were not statistically significant.
- The percentage was significantly higher among adults with no dental insurance than for those with insurance (30.2% versus 17.7%). This difference was mainly attributable to those aged 35–54 years (41.0% versus 20.4%).

Discussion

In summary, having foregone recommended dental treatment due to cost was moderately associated with age and dental insurance status.

Table 25: Percentage of people who reported that cost had prevented recommended dental treatment

		Population: people who visited dentist within last 2 years			
		Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	23.1	21.8	29.1	16.7
	<i>95% CI^(a)</i>	20.2–26.4	16.9–27.6	25.0–33.5	13.2–20.9
Sex					
Males	% of people	22.5	20.5	29.0	16.2
	<i>95% CI</i>	18.2–27.5	13.9–29.1	22.5–36.4	11.5–22.3
Females	% of people	23.7	23.0	29.2	17.2
	<i>95% CI</i>	20.8–26.9	17.7–29.4	24.9–33.8	13.0–22.4
Residential location					
Capital city	% of people	24.8	25.5	27.8	19.8
	<i>95% CI</i>	20.2–30.2	18.1–34.6	22.0–34.5	13.7–27.7
Other places	% of people	21.5	18.0	30.2	14.1
	<i>95% CI</i>	17.9–25.6	12.5–25.2	24.8–36.3	10.6–18.6
Postcode socioeconomic status					
Lowest	% of people	21.9	24.7	26.4	13.7
	<i>95% CI</i>	16.8–28.0	14.5–38.8	19.3–35.0	9.9–18.7
Middle	% of people	25.6	20.3	33.9	19.3
	<i>95% CI</i>	20.5–31.4	14.1–28.3	27.6–40.9	12.7–28.3
Highest	% of people	21.7	21.1	25.8	16.9
	<i>95% CI</i>	17.1–27.1	13.4–31.5	20.0–32.7	11.2–24.8
Government health card					
Health care card or pensioner concession card	% of people	23.3	23.2	35.9	18.4
	<i>95% CI</i>	18.4–29.1	13.2–37.5	25.9–47.5	13.7–24.3
Neither card	% of people	23.1	21.8	28.0	15.5
	<i>95% CI</i>	19.8–26.8	16.6–28.1	24.0–32.5	11.0–21.3
Place of last dental visit					
Cardholder/Public	% of people	28.8	15.9	40.8	26.8
	<i>95% CI</i>	20.5–38.8	4.7–41.7	23.9–60.1	18.0–37.9
Cardholder/Non-public	% of people	20.0	26.6	31.1	14.0
	<i>95% CI</i>	14.9–26.2	14.0–44.6	18.8–46.9	9.4–20.3
Non-cardholder/Non-public	% of people	23.1	21.8	28.0	15.5
	<i>95% CI</i>	19.8–26.8	16.6–28.1	24.0–32.5	11.0–21.3
Dental insurance					
Insured	% of people	17.7	16.8	20.4	14.6
	<i>95% CI</i>	14.8–21.0	11.3–24.2	16.2–25.3	10.5–20.0
Uninsured	% of people	30.2	28.2	41.0	19.3
	<i>95% CI</i>	26.0–34.9	21.4–36.2	33.7–48.7	14.8–24.9

(a) 95% CI = 95% confidence interval for estimated percentage.

Difficulty paying a \$100 dental bill

In NSAOH, difficulty paying for dental care was assessed with the question 'At most times of the year, how much difficulty would you have paying a \$100 dental bill? Would you say none, hardly any, a little, a lot of difficulty, don't know?'. People who answered 'a lot' were classified as having difficulty paying a \$100 dental bill. They represented 18.4% of the Queensland population aged 15 years or more (Table 26), which was slightly higher, but not significantly, than the national estimate of 18.2% (Slade et al. 2007).

Key findings

- Across age groups, there was little variation in the percentage of adults who reported difficulty paying a \$100 dental bill. There was a higher percentage in the youngest (15–34 years) age group (22.2%) compared with those aged 35–54 years (15.6%) and 55 years or more (17.0%) although these differences were not statistically significant.
- For all ages combined, there was a significantly greater percentage of females compared with males (21.8% versus 14.8%). This pattern was consistent across all age groups although the differences within age groups were not statistically significant.
- For people of all ages and across age groups, no significant differences were observed among groups classified by residential location or postcode socioeconomic status.
- There was an almost three-fold difference in the percentage who would have difficulty paying a \$100 dental bill between people who were government health cardholders (35.9%) and those who were not (12.5%). The relative difference was largest in the 35–54 years age group (51.4% versus 9.9%), closely followed by those in the 55 years or more age group (28.3% versus 6.3%).
- Within the population of government health cardholders, people whose last dental visit was to the public sector were more likely to report difficulty than those who attended elsewhere (51.4% versus 24.6%). This difference was mainly attributable to those aged 55 years or more (44.6% versus 19.1%).
- The percentage was significantly higher among adults with no dental insurance than those with dental insurance (24.2% versus 10.5%). Statistically significant differences were observed in the 35–54 years (23.4% versus 8.3%) and 55 years or more (24.8% versus 7.6%) age groups.

Discussion

In summary, government health cardholder status and dental insurance status were strongly associated with having a lot of difficulty paying a \$100 dental bill.

Table 26: Percentage of people who would have a lot of difficulty paying a \$100 dental bill

		Population: all people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	18.4	22.2	15.6	17.0
	<i>95% CI^(a)</i>	<i>16.1–20.9</i>	<i>18.0–27.1</i>	<i>13.0–18.6</i>	<i>14.5–19.9</i>
Sex					
Males	% of people	14.8	19.3	11.6	13.1
	<i>95% CI</i>	<i>11.6–18.7</i>	<i>13.3–27.1</i>	<i>7.7–17.2</i>	<i>9.7–17.6</i>
Females	% of people	21.8	25.3	19.6	20.6
	<i>95% CI</i>	<i>18.9–25.2</i>	<i>19.0–32.7</i>	<i>16.3–23.3</i>	<i>16.8–25.0</i>
Residential location					
Capital city	% of people	16.6	18.5	14.2	17.0
	<i>95% CI</i>	<i>13.2–20.6</i>	<i>13.9–24.2</i>	<i>10.5–18.9</i>	<i>13.1–21.8</i>
Other places	% of people	19.9	25.8	16.8	17.0
	<i>95% CI</i>	<i>16.8–23.3</i>	<i>19.1–33.9</i>	<i>13.4–20.9</i>	<i>13.8–20.7</i>
Postcode socioeconomic status					
Lowest	% of people	19.6	23.5	17.5	18.0
	<i>95% CI</i>	<i>16.2–23.5</i>	<i>16.7–32.0</i>	<i>12.7–23.6</i>	<i>14.1–22.6</i>
Middle	% of people	21.4	27.2	17.9	19.2
	<i>95% CI</i>	<i>17.1–26.3</i>	<i>18.8–37.7</i>	<i>13.8–22.9</i>	<i>14.8–24.5</i>
Highest	% of people	14.1	17.0	11.2	13.4
	<i>95% CI</i>	<i>10.9–18.2</i>	<i>11.7–24.1</i>	<i>7.8–15.8</i>	<i>9.5–18.8</i>
Government health card					
Health care card or pensioner concession card	% of people	35.9	41.3	51.4	28.3
	<i>95% CI</i>	<i>31.2–41.0</i>	<i>29.2–54.4</i>	<i>40.1–62.5</i>	<i>23.7–33.3</i>
Neither card	% of people	12.4	18.2	9.9	6.3
	<i>95% CI</i>	<i>10.3–14.9</i>	<i>14.1–23.2</i>	<i>7.9–12.4</i>	<i>4.5–8.9</i>
Place of last dental visit					
Cardholder/Public	% of people	51.4	54.0	62.6	44.6
	<i>95% CI</i>	<i>42.6–60.1</i>	<i>34.7–72.2</i>	<i>43.8–78.2</i>	<i>37.6–51.8</i>
Cardholder/Non-public	% of people	24.6	26.8	41.4	19.1
	<i>95% CI</i>	<i>19.7–30.3</i>	<i>14.5–44.2</i>	<i>26.5–58.1</i>	<i>14.2–25.4</i>
Non-cardholder/Non-public	% of people	12.4	18.2	9.9	6.3
	<i>95% CI</i>	<i>10.3–14.9</i>	<i>14.1–23.2</i>	<i>7.9–12.4</i>	<i>4.5–8.9</i>
Dental insurance					
Insured	% of people	10.5	16.8	8.3	7.6
	<i>95% CI</i>	<i>8.3–13.4</i>	<i>11.0–24.8</i>	<i>6.3–11.0</i>	<i>5.2–11.0</i>
Uninsured	% of people	24.2	24.4	23.4	24.8
	<i>95% CI</i>	<i>21.0–27.6</i>	<i>18.9–30.8</i>	<i>18.8–28.6</i>	<i>20.8–29.2</i>

(a) 95% CI = 95% confidence interval for estimated percentage.

Percentage of people avoiding foods due to dental problems

Avoiding food due to dental problems is a sign of poor oral health and may reflect an inability to eat properly. This reduces enjoyment of food and could affect the ability to maintain a healthy nutritional status.

In NSAOH, avoiding food was assessed in the interview by asking people 'How often have you had to avoid eating some foods because of problems with your teeth, mouth or dentures during the last 12 months? Was it: very often, often, sometimes, hardly ever, never during the last 12 months, don't know?'. People who answered 'very often,' 'often' or 'sometimes' were classified as having avoided certain foods, They represented 15.1% of the Queensland population aged 15 years or more (Table 27), which was lower than the national estimate of 17.4% (Slade et al. 2007). This difference was not statistically significant.

Key findings

- Females were more likely to report that they avoided some food (18.1%) than males (12.1%).
- The percentage who avoided food was almost twice as high in people who were government health cardholders (22.4%) than non-cardholders (12.7%).
- Within the population of government health cardholders, those who last visited a public dental clinic were almost twice as likely (30.2%) as those who visited a private dentist (16.7%) to avoid foods. This difference was largest in the 35–44 years age group, where 45.5% of cardholders who last used a public dentist reported avoiding some food compared with 19.8% of those who last visited a private dentist.
- People with no dental insurance were more likely (11.9%) than those with insurance (18.2%) to avoid foods.

Discussion

Residents of Queensland were equally as likely to avoid some foods because of problems with their teeth, mouth or gums as the rest of the Australian population. Avoiding some foods because of dental problems was associated with being female, having a government health card, having last visited a public clinic and not having dental insurance.

Table 27: Percentage of people avoiding foods due to dental problems

		Population: all people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	15.1	12.0	16.9	16.7
	<i>95% CI^(a)</i>	<i>13.4–16.9</i>	<i>8.8–16.2</i>	<i>13.9–20.4</i>	<i>14.1–19.7</i>
Sex					
Males	% of people	12.1	10.0	13.0	13.8
	<i>95% CI</i>	<i>9.9–14.8</i>	<i>6.2–15.7</i>	<i>8.6–19.1</i>	<i>10.1–18.6</i>
Females	% of people	18.1	14.2	20.7	19.4
	<i>95% CI</i>	<i>15.5–20.9</i>	<i>10.1–19.6</i>	<i>16.9–25.1</i>	<i>15.8–23.6</i>
Residential location					
Capital city	% of people	15.1	14.2	14.2	17.4
	<i>95% CI</i>	<i>12.4–18.2</i>	<i>10.1–19.6</i>	<i>10.3–19.2</i>	<i>13.0–22.9</i>
Other places	% of people	15.2	10.0	19.1	16.2
	<i>95% CI</i>	<i>13.2–17.4</i>	<i>5.8–16.9</i>	<i>14.8–24.3</i>	<i>13.2–19.6</i>
Postcode socioeconomic status					
Lowest	% of people	14.8	8.3	19.4	16.7
	<i>95% CI</i>	<i>12.8–17.2</i>	<i>4.2–15.6</i>	<i>14.3–25.6</i>	<i>12.9–21.3</i>
Middle	% of people	16.8	12.1	20.4	17.2
	<i>95% CI</i>	<i>14.3–19.6</i>	<i>7.1–19.9</i>	<i>15.6–26.2</i>	<i>13.2–22.0</i>
Highest	% of people	13.6	14.7	10.5	16.2
	<i>95% CI</i>	<i>10.4–17.7</i>	<i>9.4–22.2</i>	<i>6.3–16.8</i>	<i>11.1–23.0</i>
Government health card					
Health care card or pensioner concession card	% of people	22.4	19.8	31.8	20.2
	<i>95% CI</i>	<i>18.3–27.1</i>	<i>10.9–33.2</i>	<i>23.5–41.3</i>	<i>16.4–24.7</i>
Neither card	% of people	12.7	10.6	14.5	13.2
	<i>95% CI</i>	<i>10.8–14.9</i>	<i>7.2–15.2</i>	<i>11.5–18.2</i>	<i>9.9–17.4</i>
Place of last dental visit					
Cardholder/Public	% of people	30.2	26.4	45.5	25.8
	<i>95% CI</i>	<i>23.1–38.4</i>	<i>12.6–47.1</i>	<i>32.2–59.5</i>	<i>18.2–35.3</i>
Cardholder/Non-public	% of people	16.7	12.4	19.8	17.1
	<i>95% CI</i>	<i>12.8–21.4</i>	<i>4.9–28.3</i>	<i>10.9–33.1</i>	<i>12.9–22.3</i>
Non-cardholder/Non-public	% of people	12.7	10.6	14.5	13.2
	<i>95% CI</i>	<i>10.8–14.9</i>	<i>7.2–15.2</i>	<i>11.5–18.2</i>	<i>9.9–17.4</i>
Dental insurance					
Insured	% of people	11.9	8.4	14.0	12.2
	<i>95% CI</i>	<i>9.5–14.7</i>	<i>4.6–14.8</i>	<i>10.2–18.9</i>	<i>8.9–16.6</i>
Uninsured	% of people	18.2	14.9	19.9	20.6
	<i>95% CI</i>	<i>15.7–21.0</i>	<i>10.7–20.3</i>	<i>16.0–24.5</i>	<i>16.5–25.5</i>

(a) 95% CI = 95% confidence interval for estimated percentage.

5 Oral health perceptions

Percentage of people rating their oral health fair or poor

Self-reported global measures of oral health reflect an individual's own experience of their oral health. Single-item, self-rated oral health measures are associated with functional impairment and discomfort as well as clinical measures of dental health. They are used widely in research and provide a summary measure of oral symptoms and functioning (Benyamini et al. 2004).

In NSAOH, self-rated oral health was assessed in the interview by asking people 'And how would you rate your own DENTAL health. Would you say that it is: excellent, very good, good, fair, poor, don't know?'. People who answered 'fair' or 'poor' were classified as having fair or poor self-rated oral health. They represented 17.4% of the Queensland population aged 15 years or more (Table 28), which is just above the national estimate of 16.4% (Slade et al. 2007). This difference was not statistically significant.

Key findings

- People who had a government health card were more likely (23.7%) than those who did not (15.6%) to rate their oral health fair or poor.
- Those people who had a government health card and last visited a public dental clinic were twice as likely (40.3%) than non-government health cardholders (15.6%) to rate their oral health as fair or poor.
- People with no dental insurance were almost twice as likely (22.0%) as those with insurance (12.5%) to report fair or poor oral health.

Discussion

Dentate residents of Queensland were equally as likely to report that their oral health was 'fair' or 'poor' as other Australians. Reporting fair or poor oral health was associated with having a government health card, having last visited a public dental service and not having dental insurance.

Table 28: Percentage of people rating their oral health fair or poor

		Population: dentate people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	17.4	15.0	18.8	19.0
	<i>95% CI^(a)</i>	<i>15.4–19.7</i>	<i>11.2–19.8</i>	<i>15.5–22.6</i>	<i>15.2–23.6</i>
Sex					
Males	% of people	17.4	13.5	19.5	20.3
	<i>95% CI</i>	<i>14.6–20.7</i>	<i>8.5–20.9</i>	<i>15.0–25.0</i>	<i>15.3–26.3</i>
Females	% of people	17.5	16.6	18.1	17.8
	<i>95% CI</i>	<i>14.9–20.3</i>	<i>11.7–23.0</i>	<i>14.3–22.6</i>	<i>13.7–22.9</i>
Residential location					
Capital city	% of people	17.0	13.9	19.8	17.7
	<i>95% CI</i>	<i>14.4–19.9</i>	<i>9.3–20.4</i>	<i>15.9–24.5</i>	<i>12.4–24.6</i>
Other places	% of people	17.8	16.1	17.9	20.1
	<i>95% CI</i>	<i>14.8–21.4</i>	<i>10.6–23.8</i>	<i>13.1–24.0</i>	<i>15.1–26.4</i>
Postcode socioeconomic status					
Lowest	% of people	16.9	12.3	19.6	19.2
	<i>95% CI</i>	<i>13.5–20.8</i>	<i>6.5–21.9</i>	<i>14.3–26.2</i>	<i>13.5–26.7</i>
Middle	% of people	19.6	18.0	18.4	24.3
	<i>95% CI</i>	<i>16.4–23.3</i>	<i>12.5–25.2</i>	<i>12.4–26.5</i>	<i>17.6–32.6</i>
Highest	% of people	15.7	14.6	18.6	13.5
	<i>95% CI</i>	<i>12.3–20.0</i>	<i>8.5–23.9</i>	<i>14.6–23.3</i>	<i>8.4–21.1</i>
Government health card					
Health care card or pensioner concession card	% of people	23.7	15.0	34.1	23.9
	<i>95% CI</i>	<i>19.5–28.6</i>	<i>7.5–27.7</i>	<i>25.4–44.1</i>	<i>19.0–29.7</i>
Neither card	% of people	15.6	15.2	16.3	15.1
	<i>95% CI</i>	<i>13.3–18.3</i>	<i>11.1–20.5</i>	<i>13.1–20.0</i>	<i>10.7–21.0</i>
Place of last dental visit					
Cardholder/Public	% of people	30.3	16.0	44.7	34.0
	<i>95% CI</i>	<i>22.9–38.8</i>	<i>6.2–35.6</i>	<i>29.5–60.9</i>	<i>24.7–44.8</i>
Cardholder/Non-public	% of people	18.8	13.9	24.9	18.6
	<i>95% CI</i>	<i>14.9–23.5</i>	<i>6.3–27.9</i>	<i>14.3–39.6</i>	<i>13.8–24.7</i>
Non-cardholder/Non-public	% of people	15.6	15.2	16.3	15.1
	<i>95% CI</i>	<i>13.3–18.3</i>	<i>11.1–20.5</i>	<i>13.1–20.0</i>	<i>10.7–21.0</i>
Dental insurance					
Insured	% of people	12.5	9.4	13.6	14.2
	<i>95% CI</i>	<i>10.2–15.3</i>	<i>5.0–16.9</i>	<i>10.2–18.0</i>	<i>9.8–20.2</i>
Uninsured	% of people	22.0	19.1	24.2	24.1
	<i>95% CI</i>	<i>19.2–25.2</i>	<i>13.8–25.8</i>	<i>18.8–30.6</i>	<i>19.1–29.9</i>

(a) 95% CI = 95% confidence interval for estimated percentage.

Percentage of people experiencing toothache

Toothache is caused when the nerve root of a tooth is irritated. It is most commonly caused by infection, decay, injury or loss of a tooth. However, pain sometimes originates from other areas, most commonly the jaw joint and the ear, and radiates to the jaw, thus appearing to be tooth pain.

In NSAOH, experience of toothache was assessed in the interview by asking dentate people 'During the last 12 months how often have you had toothache? Was it: very often, often, sometimes, hardly ever, never during the last 12 months, don't know?'. People who answered 'very often,' 'often' or 'sometimes' were classified as having experienced toothache. They represented 13.2% of the dentate Queensland population aged 15 years or more (Table 29), which was lower than the national estimate of 15.1% (Slade et al. 2007). This difference was not statistically significant.

Key findings

- The experience of toothache decreased with age, from 15.3% in 15–34-year-olds to 7.5% in those aged 55 years or more.
- Within the population of government health cardholders, those who last visited a public dental clinic were almost three times as likely (25.3%) than those who visited a private dentist (8.8%) to report experience of toothache. This group was twice as likely as non-cardholders (12.4%) to experience toothache.
- People with no dental insurance were one-and-a-half times more likely (15.7%) than those with insurance (10.1%) to experience toothache.

Discussion

Residents of Queensland were equally as likely to experience toothache as the rest of the Australian population. Experience of toothache was associated with being young, having last visited a public dental clinic and not having dental insurance.

Table 29: Percentage of people experiencing toothache

		Population: dentate people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	13.2	15.3	14.8	7.5
	<i>95% CI^(a)</i>	<i>11.3–15.3</i>	<i>11.8–19.8</i>	<i>12.1–18.1</i>	<i>5.7–10.0</i>
Sex					
Males	% of people	11.6	12.5	14.3	6.2
	<i>95% CI</i>	<i>9.0–14.9</i>	<i>7.9–19.1</i>	<i>10.3–19.5</i>	<i>3.9–9.8</i>
Females	% of people	14.8	18.3	15.3	8.8
	<i>95% CI</i>	<i>12.4–17.5</i>	<i>13.5–24.3</i>	<i>12.3–18.9</i>	<i>6.3–12.2</i>
Residential location					
Capital city	% of people	12.2	13.1	14.6	7.2
	<i>95% CI</i>	<i>10.2–14.6</i>	<i>8.9–18.8</i>	<i>11.2–18.8</i>	<i>4.3–11.7</i>
Other places	% of people	14.0	17.5	15.0	7.8
	<i>95% CI</i>	<i>11.1–17.6</i>	<i>12.1–24.6</i>	<i>11.0–20.1</i>	<i>5.6–10.8</i>
Postcode socioeconomic status					
Lowest	% of people	14.9	19.0	17.8	6.3
	<i>95% CI</i>	<i>11.5–19.0</i>	<i>11.8–29.1</i>	<i>12.4–24.8</i>	<i>3.7–10.6</i>
Middle	% of people	12.7	12.5	14.8	9.1
	<i>95% CI</i>	<i>9.5–16.7</i>	<i>7.0–21.3</i>	<i>11.0–19.7</i>	<i>6.1–13.4</i>
Highest	% of people	12.3	15.1	12.2	7.3
	<i>95% CI</i>	<i>9.6–15.6</i>	<i>10.4–21.4</i>	<i>8.2–17.9</i>	<i>4.1–12.5</i>
Government health card					
Health care card or pensioner concession card	% of people	15.8	23.3	23.8	7.8
	<i>95% CI</i>	<i>12.3–20.1</i>	<i>14.4–35.5</i>	<i>17.0–32.1</i>	<i>5.4–11.1</i>
Neither card	% of people	12.4	13.9	13.3	7.2
	<i>95% CI</i>	<i>10.3–14.9</i>	<i>10.1–18.9</i>	<i>10.4–16.9</i>	<i>4.7–10.8</i>
Place of last dental visit					
Cardholder/Public	% of people	25.3	32.9	34.5	12.8
	<i>95% CI</i>	<i>19.3–32.4</i>	<i>20.0–49.1</i>	<i>23.1–48.1</i>	<i>7.9–20.2</i>
Cardholder/Non-public	% of people	8.8	12.5	14.3	5.2
	<i>95% CI</i>	<i>5.8–13.0</i>	<i>4.5–30.1</i>	<i>7.8–24.9</i>	<i>2.9–8.9</i>
Non-cardholder/Non-public	% of people	12.4	13.9	13.3	7.2
	<i>95% CI</i>	<i>10.3–14.9</i>	<i>10.1–18.9</i>	<i>10.4–16.9</i>	<i>4.7–10.8</i>
Dental insurance					
Insured	% of people	10.1	11.1	11.3	7.3
	<i>95% CI</i>	<i>7.8–12.9</i>	<i>6.0–19.5</i>	<i>8.4–15.0</i>	<i>4.8–10.9</i>
Uninsured	% of people	15.7	18.9	17.3	7.5
	<i>95% CI</i>	<i>13.3–18.4</i>	<i>14.3–24.7</i>	<i>13.6–21.7</i>	<i>4.9–11.1</i>

(a) 95% CI = 95% confidence interval for estimated percentage.

Percentage of people experiencing orofacial pain

Orofacial pain can be debilitating and indicates temporomandibular joint dysfunction.

In NSAOH, orofacial pain was assessed in the interview by asking people 'During the last month, have you had pain in the face, jaw, temple, in front of the ear, or in the ear?'. People who answered 'yes' were classified as having orofacial pain. They represented 22.6% of the Queensland population aged 15 years or more (Table 30), which was the same as the national estimate of 22.6% (Slade et al. 2007).

Key findings

- The experience of orofacial pain decreased with age, from 24.2% in 15–34-year-olds to 16.5 % in those aged 55 years or more.
- Females were more likely to report that they had orofacial pain (27.9%) than males (17.2%).
- Government health cardholders aged 35–54 years were almost twice as likely to experience orofacial pain as the same aged non-government health cardholders.

Discussion

The percentage of Queensland adults who reported orofacial pain was similar to the Australian figure. Experience of orofacial pain was associated with being young, being female, aged 35–54 years and holding a government health card.

Table 30: Percentage of people experiencing orofacial pain

		Population: all people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	22.6	24.2	25.9	16.5
	<i>95% CI^(a)</i>	20.2–25.2	19.6–29.3	22.9–29.2	13.9–19.5
Sex					
Males	% of people	17.2	15.4	20.7	14.9
	<i>95% CI</i>	13.5–21.6	9.5–24.0	15.7–26.9	11.3–19.5
Females	% of people	27.9	33.1	31.0	18.0
	<i>95% CI</i>	25.2–30.8	26.9–40.0	27.0–35.3	14.9–21.6
Residential location					
Capital city	% of people	25.5	27.6	28.6	18.4
	<i>95% CI</i>	22.5–28.8	21.7–34.4	23.9–33.8	14.7–22.8
Other places	% of people	20.1	20.9	23.6	15.2
	<i>95% CI</i>	16.6–24.1	14.6–28.8	19.8–28.0	11.7–19.5
Postcode socioeconomic status					
Lowest	% of people	18.5	16.8	23.9	14.8
	<i>95% CI</i>	14.6–23.1	10.3–26.3	18.4–30.3	10.8–20.1
Middle	% of people	23.7	24.5	26.8	18.2
	<i>95% CI</i>	19.7–28.3	17.5–33.1	21.5–33.0	14.0–23.3
Highest	% of people	25.2	29.2	26.7	16.8
	<i>95% CI</i>	21.6–29.1	22.2–37.5	22.3–31.5	12.2–22.7
Government health card					
Health care card or pensioner concession card	% of people	25.4	25.8	43.1	19.0
	<i>95% CI</i>	21.2–30.1	16.7–37.8	33.9–52.9	15.7–22.6
Neither card	% of people	21.8	24.1	23.2	14.3
	<i>95% CI</i>	18.9–24.9	19.2–29.8	19.9–26.9	10.9–18.4
Place of last dental visit					
Cardholder/Public	% of people	27.5	27.2	47.2	18.5
	<i>95% CI</i>	21.8–33.9	14.8–44.5	35.7–59.0	13.1–25.4
Cardholder/Non-public	% of people	23.8	24.3	39.5	19.2
	<i>95% CI</i>	18.4–30.2	12.6–41.6	24.9–56.3	14.6–24.8
Non-cardholder/Non-public	% of people	21.8	24.1	23.2	14.3
	<i>95% CI</i>	18.9–24.9	19.2–29.8	19.9–26.9	10.9–18.4
Dental insurance					
Insured	% of people	20.6	22.0	22.7	16.3
	<i>95% CI</i>	17.8–23.6	15.7–29.8	18.9–26.9	12.5–21.1
Uninsured	% of people	24.8	27.3	29.5	16.2
	<i>95% CI</i>	21.4–28.6	21.9–33.4	24.4–35.2	12.9–20.3

(a) 95% CI = 95% confidence interval for estimated percentage.

Perceived need for dentures

In NSAOH, people were asked at the time of the interview, 'Currently, which of the following dental treatments do you think you need to have?'. The possible responses varied for dentate and edentulous people. All people were asked if they felt they needed dentures. In Queensland, 7.5% of people thought they needed dentures (Table 31), which was very similar to the national estimate of 7.2% (Slade et al. 2007).

Key findings

- The percentage of adults who thought they needed dentures was strongly age-related, increasing from 2.1% among 15–34-year-olds to 5.8% among adults aged 35–54 years and 16.3% among adults aged 55 years or more.
- There were no significant differences in the perceived need for dentures by sex, residential location in the capital city or other places, or socioeconomic status of postcodes.
- The need for a denture was over twice as high among those adults who had a government health card (13.5%) compared with those who did not (5.5%).
- Those adults who had a government health card and who last visited a public clinic were most likely to report needing for a denture (15.6%). The percentage was similar among government health cardholders who last visited a private dentist (11.9%), and lowest among non-government health cardholders who last visited a private dentist (5.5%).
- Uninsured adults were more likely to need dentures (9.3%) compared with those with dental insurance (5.6%).
- The age-relatedness of the need for dentures was evident within subgroups of adults formed by socioeconomic characteristics. For instance, among adults without dental insurance, the percentage needing dentures rose from 2.4% in the 15–34 years age group to 8.1% in the 35–54 years and 19.7% in the 55 years or more age groups.

Discussion

The percentage of people needing dentures was low. It is related to the observed pattern for complete tooth loss and numbers of missing teeth. However, the level of need for dentures was considerably lower than the percentage of people with either complete tooth loss or reasonable numbers of missing teeth. The relationship between perceived need and professional judgement of the need for dentures is complex, but people generally express a lower need than is assessed by dentists.

Table 31: Percentage of people who need dentures

		Population: all people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	7.5	2.1	5.8	16.3
	<i>95% CI^(a)</i>	6.4–8.7	1.1–4.0	4.2–7.9	13.3–19.8
Sex					
Males	% of people	7.3	2.4	5.1	16.4
	<i>95% CI</i>	5.8–9.2	0.9–6.3	2.9–8.8	12.4–21.3
Females	% of people	7.7	1.7	6.4	16.3
	<i>95% CI</i>	6.1–9.6	0.6–4.6	4.4–9.2	12.6–20.8
Residential location					
Capital city	% of people	6.7	2.7	5.2	14.5
	<i>95% CI</i>	5.2–8.7	1.2–5.9	3.3–8.1	9.5–21.4
Other places	% of people	8.2	1.5	6.2	17.7
	<i>95% CI</i>	6.8–9.8	0.5–4.7	3.9–9.7	14.4–21.5
Postcode socioeconomic status					
Lowest	% of people	9.4	1.3	6.8	19.5
	<i>95% CI</i>	7.7–11.3	0.2–8.2	4.4–10.3	15.2–24.7
Middle	% of people	7.7	2.3	6.7	15.7
	<i>95% CI</i>	6.1–9.6	0.8–6.4	3.8–11.6	11.8–20.6
Highest	% of people	5.6	2.5	3.8	13.0
	<i>95% CI</i>	3.9–8.0	0.9–6.2	2.0–6.8	7.2–22.4
Government health card					
Health care card or pensioner concession card	% of people	13.5	0.4	10.7	20.0
	<i>95% CI</i>	10.5–17.1	0.1–2.9	6.2–17.9	15.9–24.9
Neither card	% of people	5.5	2.5	5.0	12.8
	<i>95% CI</i>	4.4–6.9	1.2–4.9	3.2–7.6	9.1–17.6
Place of last dental visit					
Cardholder/Public	% of people	15.6	0.0	19.8	23.7
	<i>95% CI</i>	10.3–22.9	—	10.5–34.2	16.0–33.5
Cardholder/Non-public	% of people	11.9	0.9	2.7	18.0
	<i>95% CI</i>	8.5–16.5	0.1–6.0	0.9–8.0	12.9–24.5
Non-cardholder/Non-public	% of people	5.5	2.5	5.0	12.8
	<i>95% CI</i>	4.4–6.9	1.2–4.9	3.2–7.6	9.1–17.6
Dental insurance					
Insured	% of people	5.6	1.8	3.7	11.7
	<i>95% CI</i>	4.1–7.5	0.5–6.2	1.9–7.0	8.0–17.0
Uninsured	% of people	9.3	2.4	8.1	19.7
	<i>95% CI</i>	7.6–11.3	1.1–5.5	5.8–11.1	15.3–24.9

(a) 95% CI = 95% confidence interval for estimated percentage.

Perceived need for dental extraction or filling

Dentate adults were asked about other dental services, including extractions or fillings that they might need. The responses to the options 'Any extractions' or 'Any fillings' have been combined so that the response indicates a perceived dental problem for which one or other of these two aspects of routine dental care is thought to be required, most likely as a sequelae for dental caries. Which of these two dental services was provided would be determined by a process of negotiation between patient and provider, influenced by both provider and patient circumstances. In Queensland, 34.9% of dentate adults perceived a need for an extraction or filling (Table 32), which was similar to the national estimate of 32.9% (Slade et al. 2007).

Key findings

- The percentage of dentate adults who thought they needed extractions or fillings was similar across the two younger age groups (37.5% and 38.5%) but lower among people aged 55 years or more (25.5%).
- There were no significant differences by sex, residential location or government health cardholder status.
- The percentage of dentate adults who thought they needed an extraction or filling was significantly higher among people who had a government health card and who last visited a public dental clinic (51.6%) than those who last visited a non-public dentist, whether they had a government health card or not (28.8% and 33.9% respectively).
- Uninsured adults were less likely to need extractions or fillings (44.1%) than those who were insured (24.6%).
- The age-related pattern of need for an extraction or filling was repeated within most subgroups of adults formed by socioeconomic characteristics.

Discussion

Just over one-third of dentate adults perceived a need for an extraction or filling. The percentage was lower among the oldest age group, and showed few socioeconomic characteristic variations. Perceived need for an extraction or filling was higher among those dentate adults who had a government health card and last visited a public dental clinic compared to those who last visited a non-public dentist, and among the uninsured compared with the insured.

Table 32: Percentage of people who need an extraction or filling

		Population: dentate people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	34.9	37.5	38.5	25.5
	<i>95% CI^(a)</i>	<i>32.1–37.7</i>	<i>32.2–43.0</i>	<i>35.2–41.9</i>	<i>22.2–29.1</i>
Sex					
Males	% of people	37.6	37.6	45.1	26.1
	<i>95% CI</i>	<i>33.3–42.0</i>	<i>29.8–46.2</i>	<i>38.9–51.5</i>	<i>21.1–31.7</i>
Females	% of people	32.2	37.3	32.0	24.9
	<i>95% CI</i>	<i>28.9–35.7</i>	<i>31.2–43.9</i>	<i>28.0–36.3</i>	<i>20.7–29.7</i>
Residential location					
Capital city	% of people	34.3	38.4	37.0	23.5
	<i>95% CI</i>	<i>30.6–38.3</i>	<i>32.1–45.2</i>	<i>32.5–41.8</i>	<i>18.0–30.0</i>
Other places	% of people	35.3	36.6	39.8	27.1
	<i>95% CI</i>	<i>31.4–39.5</i>	<i>28.6–45.4</i>	<i>35.1–44.6</i>	<i>23.6–31.1</i>
Postcode socioeconomic status					
Lowest	% of people	35.5	36.9	41.6	26.4
	<i>95% CI</i>	<i>30.0–41.4</i>	<i>25.7–49.7</i>	<i>35.2–48.4</i>	<i>21.7–31.9</i>
Middle	% of people	38.6	41.8	41.0	29.3
	<i>95% CI</i>	<i>34.7–42.6</i>	<i>33.0–51.2</i>	<i>35.8–46.3</i>	<i>24.1–35.1</i>
Highest	% of people	30.6	34.2	32.8	20.6
	<i>95% CI</i>	<i>26.6–34.8</i>	<i>27.7–41.4</i>	<i>28.2–37.9</i>	<i>14.9–27.6</i>
Government health card					
Health care card or pensioner concession card	% of people	38.4	41.1	51.0	31.1
	<i>95% CI</i>	<i>32.9–44.3</i>	<i>28.3–55.2</i>	<i>41.3–60.6</i>	<i>25.8–36.9</i>
Neither card	% of people	33.9	36.9	36.4	21.1
	<i>95% CI</i>	<i>30.6–37.3</i>	<i>31.2–43.1</i>	<i>32.6–40.5</i>	<i>16.9–26.0</i>
Place of last dental visit					
Cardholder/Public	% of people	51.6	45.2	65.3	48.5
	<i>95% CI</i>	<i>43.5–59.5</i>	<i>29.1–62.5</i>	<i>49.8–78.2</i>	<i>39.1–58.1</i>
Cardholder/Non-public	% of people	28.8	36.4	38.4	22.0
	<i>95% CI</i>	<i>22.2–36.4</i>	<i>19.7–57.2</i>	<i>24.3–54.8</i>	<i>16.7–28.3</i>
Non-cardholder/Non-public	% of people	33.9	36.9	36.4	21.1
	<i>95% CI</i>	<i>30.6–37.3</i>	<i>31.2–43.1</i>	<i>32.6–40.5</i>	<i>16.9–26.0</i>
Dental insurance					
Insured	% of people	24.6	24.7	29.0	18.1
	<i>95% CI</i>	<i>21.3–28.3</i>	<i>17.2–34.1</i>	<i>24.2–34.3</i>	<i>13.8–23.3</i>
Uninsured	% of people	44.1	47.5	47.6	32.9
	<i>95% CI</i>	<i>40.5–47.9</i>	<i>40.9–54.2</i>	<i>42.3–53.1</i>	<i>28.4–37.8</i>

(a) 95% CI = 95% confidence interval for estimated percentage.

Perceived need for a dental check-up

Dentate adults were asked about their perceived need for a check-up. This is regarded as an indicator of compliance with the recommendation of dentists to visit regularly when asymptomatic so as to detect disease earlier and receive prompt treatment for any dental problems. A check-up also provides an opportunity for preventive services to be received. In Queensland, 60.5% of adults perceived a need for a check-up (Table 33), which was very similar to the national estimate of 59.6% (Slade et al. 2007).

Key findings

- The percentage of dentate adults who thought they needed a check-up was similar across the two younger age groups (67.3% and 61.3%) but lower among people aged 55 years or more (49.2%).
- There were no significant differences by sex, residential location, postcode socioeconomic status, government health cardholder status or place of last dental visit.
- The percentage of dentate adults who thought they needed a check-up was significantly higher among those who were uninsured (66.8%) than those insured (53.1%).
- The age-related pattern of perceived need for a check-up was repeated within subgroups of adults formed by most of the socioeconomic characteristics. Perceived need for a check-up was significantly lower among those adults aged 55 years or more for many of the subgroups formed by socioeconomic characteristics. For instance, among females, the percentage was lower in the 55 years or more age group than in the two younger age groups.

Discussion

About 6 out of 10 dentate adults perceived a need for a check-up. The percentage was similar for the two younger age groups but significantly lower among those adults aged 55 years or more. There was little variation by socioeconomic characteristics, which might reflect a confounding of perceived need for a check-up by time since last dental visit. Those dentate adults with a higher likelihood of compliance with the recommendation for a regular check-up visit may have last visited more recently and hence not perceive a need for a further check-up at the time of the interview.

Table 33: Percentage of people perceiving a need for a check-up

		Population: dentate people Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	60.5	67.3	61.3	49.2
	<i>95% CI^(a)</i>	<i>57.4–63.5</i>	<i>62.5–71.9</i>	<i>56.9–65.4</i>	<i>44.7–53.7</i>
Sex					
Males	% of people	60.4	63.6	62.7	52.1
	<i>95% CI</i>	<i>55.3–65.4</i>	<i>55.8–70.7</i>	<i>55.6–69.4</i>	<i>44.9–59.3</i>
Females	% of people	60.6	71.1	59.8	46.3
	<i>95% CI</i>	<i>57.2–63.8</i>	<i>65.4–76.3</i>	<i>55.3–64.1</i>	<i>40.4–52.3</i>
Residential location					
Capital city	% of people	62.4	70.6	60.8	51.5
	<i>95% CI</i>	<i>57.9–66.8</i>	<i>63.7–76.6</i>	<i>55.1–66.3</i>	<i>45.1–57.9</i>
Other places	% of people	58.8	64.2	61.6	47.3
	<i>95% CI</i>	<i>54.6–62.8</i>	<i>57.2–70.6</i>	<i>55.2–67.7</i>	<i>41.0–53.7</i>
Postcode socioeconomic status					
Lowest	% of people	56.7	60.9	59.7	48.1
	<i>95% CI</i>	<i>50.6–62.6</i>	<i>51.4–69.7</i>	<i>51.0–67.8</i>	<i>38.7–57.8</i>
Middle	% of people	61.6	66.3	62.9	52.1
	<i>95% CI</i>	<i>57.0–66.0</i>	<i>57.4–74.1</i>	<i>55.7–69.5</i>	<i>45.8–58.2</i>
Highest	% of people	62.7	72.8	60.7	47.4
	<i>95% CI</i>	<i>57.7–67.4</i>	<i>66.4–78.3</i>	<i>53.8–67.2</i>	<i>41.1–53.7</i>
Government health card					
Health care card or pensioner concession card	% of people	57.5	64.6	68.0	48.7
	<i>95% CI</i>	<i>51.1–63.6</i>	<i>49.7–77.1</i>	<i>57.5–76.9</i>	<i>42.8–54.6</i>
Neither card	% of people	61.6	68.5	60.1	49.6
	<i>95% CI</i>	<i>58.2–64.9</i>	<i>63.1–73.4</i>	<i>55.2–64.9</i>	<i>43.5–55.7</i>
Place of last dental visit					
Cardholder/Public	% of people	65.5	62.5	80.0	58.8
	<i>95% CI</i>	<i>56.8–73.2</i>	<i>42.7–78.8</i>	<i>64.8–89.7</i>	<i>49.6–67.5</i>
Cardholder/Non-public	% of people	51.7	66.8	57.4	43.4
	<i>95% CI</i>	<i>44.3–59.1</i>	<i>45.7–82.8</i>	<i>42.9–70.7</i>	<i>36.5–50.4</i>
Non-cardholder/Non-public	% of people	61.6	68.5	60.1	49.6
	<i>95% CI</i>	<i>58.2–64.9</i>	<i>63.1–73.4</i>	<i>55.2–64.9</i>	<i>43.5–55.7</i>
Dental insurance					
Insured	% of people	53.1	60.3	53.7	44.6
	<i>95% CI</i>	<i>48.7–57.4</i>	<i>51.3–68.6</i>	<i>47.9–59.5</i>	<i>38.9–50.4</i>
Uninsured	% of people	66.8	72.5	68.6	53.9
	<i>95% CI</i>	<i>62.6–70.7</i>	<i>65.6–78.4</i>	<i>62.4–74.2</i>	<i>47.9–59.9</i>

(a) 95% CI = 95% confidence interval for estimated percentage.

Perceived urgency of dental treatment needs

Dentate adults who perceived a need for an extraction or filling were asked about their perceived urgency of needed dental treatment. Dental problems vary from truly urgent problems like dental trauma, swelling in or around the jaws, or bleeding (usually as a complication of dental treatment); through situations where treatment is highly desirable in a short period of time (usually associated with pain); to problems that can reasonably wait reasonable periods of time to be treated. In NSAOH, dentate adults who perceived a need for an extraction or filling were asked at the time of the interview, 'How soon do you think you need this dental treatment?'. The possible responses included a wide range of time periods. These have been collapsed to perceiving a need for treatment within 3 months or longer than 3 months. In Queensland, 65.9% of dentate adults needing an extraction or filling perceived a dental treatment within 3 months (Table 34), which was similar to the national estimate of 69.3% (Slade et al. 2007).

Key findings

- The percentage of dentate adults needing an extraction or filling who thought they needed treatment within 3 months showed no trend by age, varying only from 63.3% to 68.5% across the three age groups.
- There was no significant difference among most subgroups formed by social characteristics, with the exception of residential location. The exception was residential location, where perceived urgency was more likely in Brisbane (77.9%) than in the rest of Queensland (55.4%).

Discussion

Just less than 7 out of 10 dentate adults who needed an extraction or filling perceived a need for dental treatment within 3 months. The percentage with perceived need for more urgent treatment was not significantly different across the three age groups. There was little variation by socioeconomic characteristics, which might reflect a confounding of perceived need for dental treatment within 3 months by time since last dental visit.

Table 34: Percentage of people perceiving a need for treatment within 3 months

		Population: dentate people who need an extraction or filling			
		Age (years)			
		All ages	15–34	35–54	≥55
All people	Per cent of people	65.9	67.3	63.3	68.5
	<i>95% CI^(a)</i>	<i>61.0–70.4</i>	<i>59.7–74.1</i>	<i>55.4–70.6</i>	<i>60.2–75.8</i>
Sex					
Males	% of people	64.6	69.0	59.5	68.4
	<i>95% CI</i>	<i>56.0–72.4</i>	<i>55.1–80.2</i>	<i>47.3–70.7</i>	<i>55.9–78.6</i>
Females	% of people	67.3	65.6	68.6	68.7
	<i>95% CI</i>	<i>61.9–72.3</i>	<i>55.1–74.7</i>	<i>58.8–76.9</i>	<i>56.6–78.7</i>
Residential location					
Capital city	% of people	77.9	81.7	71.9	82.3
	<i>95% CI</i>	<i>72.3–82.6</i>	<i>73.3–87.9</i>	<i>61.1–80.6</i>	<i>69.8–90.4</i>
Other places	% of people	55.4	52.8	56.3	58.5
	<i>95% CI</i>	<i>48.0–62.6</i>	<i>41.1–64.3</i>	<i>44.9–67.1</i>	<i>48.3–68.0</i>
Postcode socioeconomic status					
Lowest	% of people	58.2	55.8	58.5	61.9
	<i>95% CI</i>	<i>49.1–66.8</i>	<i>41.8–69.0</i>	<i>41.7–73.5</i>	<i>48.9–73.5</i>
Middle	% of people	68.8	68.9	66.0	76.1
	<i>95% CI</i>	<i>61.7–75.1</i>	<i>57.9–78.2</i>	<i>53.7–76.4</i>	<i>63.0–85.6</i>
Highest	% of people	69.7	74.6	64.9	67.1
	<i>95% CI</i>	<i>57.6–79.5</i>	<i>56.9–86.7</i>	<i>51.0–76.7</i>	<i>46.7–82.6</i>
Government health card					
Health care card or pensioner concession card	% of people	68.9	77.5	69.0	61.8
	<i>95% CI</i>	<i>59.4–77.1</i>	<i>57.9–89.6</i>	<i>50.5–82.9</i>	<i>51.3–71.3</i>
Neither card	% of people	64.8	65.0	61.9	75.8
	<i>95% CI</i>	<i>59.2–70.0</i>	<i>56.0–73.0</i>	<i>53.5–69.6</i>	<i>63.9–84.7</i>
Place of last dental visit					
Cardholder/Public	% of people	67.8	67.9	80.7	55.7
	<i>95% CI</i>	<i>56.0–77.6</i>	<i>37.7–88.1</i>	<i>61.2–91.7</i>	<i>43.5–67.2</i>
Cardholder/Non-public	% of people	70.4	90.2	51.6	69.1
	<i>95% CI</i>	<i>52.7–83.6</i>	<i>66.5–97.7</i>	<i>26.2–76.2</i>	<i>51.7–82.3</i>
Non-cardholder/Non-public	% of people	64.8	65.0	61.9	75.8
	<i>95% CI</i>	<i>59.2–70.0</i>	<i>56.0–73.0</i>	<i>53.5–69.6</i>	<i>63.9–84.7</i>
Dental insurance					
Insured	% of people	70.0	80.0	61.5	76.3
	<i>95% CI</i>	<i>62.0–77.0</i>	<i>63.9–90.0</i>	<i>48.9–72.7</i>	<i>61.3–86.7</i>
Uninsured	% of people	65.0	64.3	65.9	64.9
	<i>95% CI</i>	<i>59.0–70.6</i>	<i>54.4–73.2</i>	<i>56.7–74.1</i>	<i>55.3–73.3</i>

(a) 95% CI = 95% confidence interval for estimated percentage.

Age-standardised comparison between government health cardholders and non-health cardholders

Findings from 29 of the preceding tables are summarised in Table 35, to compare oral health indicators between people with a government health card and non-cardholders. Percentages and means for the two groups are age-standardised, a statistical procedure that aims to remove any effects of age that might account for differences between the two groups in each oral health indicator. As noted in Table 4, smaller percentages of people in the two youngest age groups had a health care card or pensioner concession card than in the oldest age group. Age standardisation seeks to compensate for that difference in age distribution, so that differences in any single indicator between the two groups are not confounded by age.

- For 14 outcomes reported in Table 35, health cardholders had significantly poorer oral health status, oral health care and perceived oral health.
- For measures relating to tooth loss, the magnitude of difference in age-standardised estimates between the two groups was noticeably smaller than the difference between the same two groups noted in preceding tables where there was no adjustment for age. For example, health cardholders had a 1.8-fold-greater prevalence of complete tooth loss when the comparison was adjusted for age (Table 35), whereas prevalence differed by a factor of 5.1 when all ages were contrasted in Table 5 (14.7% for health cardholders compare with 2.9% for non-cardholders). This degree of attenuation indicates that age was an important confounder of the relationship between health card status and complete tooth loss.
- In contrast, the relative difference between the two groups in the percentage who avoided or delayed care was amplified in the age-standardised result compared with the unstandardised result.
- However, for most other indicators in Table 35, the relative differences in age-standardised results between the two groups were similar in magnitude to the preceding tables. This is because there was only a weak association between age and indicators such as dental attendance, with the consequence that there was little confounding of the difference between the two groups by age.

In summary, the findings in Table 35 confirm that health cardholders are disadvantaged with respect to several indicators of oral health status, oral health care and perceived oral health, and that the disadvantage is not due to the older age profile of health cardholders compared to non-cardholders. Even when age standardisation attenuated the difference between the two groups, as observed for measures relating to tooth loss, the differences tended to remain statistically significant.

Table 35: Age-standardised comparison of health cardholders and non-health cardholders

Variable	Cardholders	Non-cardholders
	Estimate (95%CI)	Estimate (95%CI)
% of people with complete tooth loss	7.7 (6.1–9.3)	4.7 (3.3–6.1)
% of people with fewer than 21 teeth	17.5 (14.7–20.3)	12.7 (10.5–15.0)
% of dentate people who wear denture(s)	20.9 (17.3–24.4)	17.0 (14.9–19.1)
Average number of missing teeth per person	5.6 (5.1–6.1)	4.7 (4.1–5.2)
% of people with untreated coronal decay	36.4 (28.8–44.0)	23.9 (19.1–28.7)
% of people with untreated root decay	6.4 (2.5–10.2)	6.9 (4.2–9.7)
% of people with one or more filled teeth	92.6 (88.3–96.9)	87.9 (84.1–91.7)
Average number of DMF teeth per person	14.1 (13.4–14.9)	14.1 (13.6–14.6)
% of people with moderate or severe periodontitis	27.1 (18.7–35.5)	26.7 (21.8–31.6)
% of people with 4+ mm periodontal pocket depth	17.0 (10.7–23.3)	19.4 (13.2–25.6)
% of people with 4+ mm clinical attachment loss	40.9 (31.6–50.2)	39.3 (33.3–45.2)
% of people with gingival inflammation	33.1 (24.3–41.9)	22.8 (17.5–28.1)
% of people visiting dentist within last 12 months	50.2 (45.3–55.1)	63.1 (59.9–66.2)
% of people who attended a private dental practice at last dental visit	49.7 (43.0–56.3)	88.4 (86.7–90.2)
% of people who paid for their last dental visit	56.0 (48.8–63.2)	100.0 (100.0–100.0)
% of people who usually visit a dental professional at least once a year	37.2 (31.7–42.7)	56.1 (52.5–59.8)
% of people who have a dentist they usually attend	53.3 (46.3–60.3)	80.2 (77.5–82.9)
% of people who usually visit a dentist for a check up	37.8 (32.2–43.4)	57.3 (53.6–61.1)
% of people who avoided or delayed dental care	42.3 (37.3–47.4)	27.2 (24.6–29.8)
% of people who reported that cost had prevented recommended dental treatment	27.6 (21.8–33.5)	21.3 (18.1–24.5)
% of people who would have a lot of difficulty paying a \$100 dental bill	41.3 (35.1–47.5)	12.3 (10.1–14.5)
% of people avoiding foods due to dental problems	24.3 (18.9–29.6)	13.1 (10.9–15.3)
% of people rating their oral health fair or poor	25.0 (20.2–29.7)	15.2 (12.9–17.5)
% of people experiencing toothache	18.5 (13.9–23.2)	11.2 (9.1–13.3)
% of people experiencing orofacial pain	29.8 (24.4–35.3)	20.5 (17.6–23.4)
% of people who need dentures	9.7 (6.9–12.5)	6.7 (5.1–8.3)
% of people who need an extraction or filling	42.0 (35.5–48.5)	30.9 (28.1–33.8)
% of people perceiving a need for a check up	60.4 (53.7–67.2)	57.6 (54.4–60.8)
% of people perceiving a need for treatment within 3 months	71.5 (64.1–79.0)	64.5 (59.4–69.6)

Age-standardised comparison between the dentally insured and the uninsured

Age standardisation has been used in Table 36 to make comparisons between dentally insured and uninsured people in each of the 30 oral health indicators presented in Tables 5–34. These comparisons are based on the same principles noted for Table 35. That is, age standardisation aims to compare insured and uninsured people after adjusting for potential differences in the age distribution between the two groups. In principle, however, there should be little confounding of these effects because there were only small differences in dental insurance coverage among the three age groups (Table 4).

- The results in Table 36 show statistically significantly poorer outcomes for uninsured people in 21 of the 30 indicators. For 18 of those 21 indicators, statistically significant differences were also observed in the preceding tables.
- For three indicators in Table 36, the age-standardised result produced a greater relative difference between the insured and uninsured compared with unstandardised results: denture wearing, teeth missing due to pathology and moderate to severe periodontitis.
- Conversely, the nine indicators that did not differ to a statistically significant degree between insured and uninsured people in Table 36 were similarly non-significant when contrasted between the two groups in previous tables that did not use age standardisation.

In summary, the findings in Table 36 confirm generally poorer oral health outcomes for uninsured people compared to insured people. Age standardisation did not appreciably alter the relationship between insurance status and any of the indicators, inferring that there was very little confounding of the effects of insurance due to age.

Table 36: Age-standardised comparison of the dentally insured and the uninsured

Variable	Insured	Uninsured
	Estimate (95%CI)	Estimate (95%CI)
% of people with complete tooth loss	3.8 (2.5–5.0)	7.6 (6.4–8.8)
% of people with fewer than 21 teeth	10.4 (8.3–12.4)	16.9 (14.8–19.0)
% of dentate people who wear denture(s)	15.3 (13.4–17.3)	19.8 (17.3–22.2)
Average number of missing teeth per person	4.1 (3.8–4.5)	5.6 (5.0–6.1)
% of people with untreated coronal decay	20.8 (14.8–26.8)	32.0 (26.1–37.9)
% of people with untreated root decay	3.6 (1.7–5.4)	8.0 (5.4–10.7)
% of people with one or more filled teeth	88.7 (83.2–94.2)	89.4 (85.4–93.5)
Average number of DMF teeth per person	13.7 (13.1–14.4)	14.1 (13.5–14.7)
% of people with moderate or severe periodontitis	19.9 (14.2–25.7)	32.4 (25.9–38.8)
% of people with 4+ mm periodontal pocket depth	14.3 (10.0–18.5)	22.4 (14.6–30.2)
% of people with 4+ mm clinical attachment loss	33.8 (27.2–40.4)	46.5 (38.9–54.1)
% of people with gingival inflammation	21.8 (14.8–28.7)	27.7 (22.0–33.4)
% of people visiting dentist within last 12 months	70.3 (66.5–74.2)	48.2 (44.7–51.8)
% of people who attended a private dental practice at last dental visit	91.8 (89.8–93.7)	70.1 (66.9–73.3)
% of people who paid for their last dental visit	99.2 (98.8–99.7)	81.6 (78.9–84.4)
% of people who received government-subsidised dental care in private sector	0.0 (0.0–0.0)	1.2 (0.3–2.2)
% of people who usually visit a dental professional at least once a year	69.9 (65.7–74.1)	34.8 (31.5–38.0)
% of people who have a dentist they usually attend	88.2 (85.8–90.7)	60.3 (56.4–64.3)
% of people who usually visit a dentist for a check up	72.7 (68.8–76.7)	35.2 (31.9–38.4)
% of people who avoided or delayed dental care	19.3 (16.1–22.5)	43.4 (39.9–46.8)
% of people who reported that cost had prevented recommended dental treatment	16.7 (13.5–19.9)	30.0 (25.8–34.3)
% of people who would have a lot of difficulty paying a \$100 dental bill	11.4 (8.7–14.0)	25.1 (22.0–28.1)
% of people avoiding foods due to dental problems	11.2 (8.6–13.8)	18.1 (15.6–20.6)
% of people rating their oral health fair or poor	12.0 (9.4–14.7)	22.0 (19.2–24.8)
% of people experiencing toothache	9.8 (7.2–12.5)	15.0 (12.6–17.4)
% of people experiencing orofacial pain	20.6 (17.3–23.9)	24.5 (21.1–27.9)
% of people who need dentures	5.3 (3.8–6.7)	9.7 (7.8–11.5)
% of people who need an extraction or filling	23.8 (20.2–27.5)	42.8 (39.4–46.3)
% of people perceiving a need for a check up	52.3 (47.9–56.8)	65.2 (61.4–69.0)
% of people perceiving a need for treatment within 3 months	70.3 (64.2–76.4)	63.2 (57.3–69.1)

Appendix

Sample counts

Table A.1: Table counts of interviewed people

	Age group (years)			
	All ages	15–34	35–54	≥55
All people	2,052	433	780	839
Sex				
Males	788	163	277	348
Females	1,264	270	503	491
Residential location				
Capital city	910	228	349	333
Other places	1,142	205	431	506
Postcode socioeconomic status				
Lowest	640	120	223	297
Middle	747	147	304	296
Highest	665	166	253	246
Government health card				
Blank but applicable	6	4	1	1
Health care card or pensioner concession card	640	82	125	433
Neither card	1,406	347	654	405
Place of last dental visit				
Cardholder/Public	256	39	57	160
Cardholder/Non-public	384	43	68	273
Dental insurance				
Blank but applicable	28	21	4	3
Insured	925	160	403	362
Uninsured	1,099	252	373	474

Table A.2: Sample counts of examined people

	Age group (years)			
	All ages	15–34	35–54	≥55
All people	824	143	326	355
Sex				
Males	338	53	122	163
Females	486	90	204	192
Residential location				
Capital city	381	73	148	160
Other places	443	70	178	195
Postcode socioeconomic status				
Lowest	240	32	90	118
Middle	297	56	123	118
Highest	287	55	113	119
Government health card				
Blank but applicable	3	2	1	0
Health care card or pensioner concession card	261	32	56	173
Neither card	560	109	269	182
Place of last dental visit				
Cardholder/Public	127	17	36	74
Cardholder/Non-public	134	15	20	99
Dental insurance				
Blank but applicable	10	6	3	1
Insured	389	55	166	168
Uninsured	425	82	157	186

Glossary

95% confidence interval Defines the uncertainty around an estimated value – there is a 95% probability that the true value falls within the range of the upper and lower limits.

Attachment loss The distance in millimetres measured from the edge of the enamel of a tooth to the gum tissue that is adherent to its root.

Calibration A procedure to promote standardisation between examiners performing the oral examinations.

Canine One of four ‘eye teeth’ positioned next to the incisors and used for tearing food.

Capital city The administrative seat of government of each of Australia’s six states and two territories – each capital city also represents the most populous location of its respective state or territory.

Cemento-enamel junction Point on a tooth surface where the tooth crown joins the tooth root.

Census The Census of Population and Housing conducted every 5 years by the Australian Bureau of Statistics.

Complete tooth loss Loss of all natural teeth (also referred to as edentulism).

Coronal Pertaining to the crown of a tooth.

Crown The portion of tooth covered by white enamel that usually is visible in the mouth.

Dental attendance Behaviour related to the use of dental services.

Dental caries The process in which tooth structure is destroyed by acid produced by bacteria in the mouth – see dental decay.

Dental caries experience The cumulative effect of the caries process through a person’s lifetime, manifesting as teeth that are decayed, missing or filled

Dental decay Cavity resulting from dental caries.

Dental insurance Dental care is not covered under Australia’s universal public health insurance vehicle, Medicare, and consequently people seeking cover can elect to carry private dental insurance.

Dentate Having one or more natural teeth.

Dentition The set of teeth – a complete dentition comprises 32 adult teeth.

Denture A removable dental prosthesis that substitutes for missing natural teeth and adjacent tissues.

DMFT An index of dental caries experience measured by counting the number of decayed (D), missing (M) and filled (F) teeth (T).

Edentulous A state of complete loss of all natural teeth.

Enamel Hard white mineralised tissue covering the crown of a tooth.

Epidemiology The study of the distribution and causes of health and disease in populations.

Examination protocol Methods and guidelines for conducting standardised oral examinations in a survey.

Extraction Removal of a natural tooth.

Generation A group of people born during a defined period of time (also referred to as a birth cohort).

Gingiva Gum tissue.

Gingivitis Redness, swelling or bleeding of the gums caused by inflammation.

Government health care card A concession card issued by the Australian Government that entitles the holder to services including public dental care.

Incisor One of eight front teeth used during eating for cutting food.

Index of Relative Socioeconomic Advantage/Disadvantage (IRSAD) One of four indices measuring area-level disadvantage derived by the Australian Bureau of Statistics – the IRSAD is derived from attributes such as low income, low educational attainment, high unemployment and jobs in relatively unskilled occupations.

Indigenous identity A person who states that they are of Aboriginal and/or Torres Strait Islander descent is an Indigenous Australian.

Mean The arithmetic average of a set of values.

Molar One of 12 back teeth used in grinding food.

Natural teeth Refers to a person's own teeth as opposed to artificial teeth.

Orofacial pain Pain located in the face, jaw, temple, in front of the ear or in the ear.

Participation rate The proportion of people from whom survey information is collected from among the total number of people selected as intended study participants.

Periodontal disease Disease of the gums and other tissues that attach to and anchor teeth to the jaws.

Periodontal pocket A space below the gum line that exists between the root of a tooth and the gum surrounding that tooth.

Periodontitis Disease of the gums caused by bacteria, characterised by swelling and bleeding of the gums and loss of tissue that attaches the tooth to the jaw.

Permanent teeth Adult teeth (secondary teeth).

Plaque A film composed of bacteria and food debris that adheres to the tooth surface.

Prevalence The proportion of people with a defined disease within a defined population.

Probing pocket depth The measured depth of the periodontal pocket.

Recorder A person, usually a dental assistant, who recorded the results of an oral examination onto a laptop computer.

Relative difference The difference between two values calculated as a ratio of one value divided by another.

Restoration A filling to repair a tooth damaged by decay or injury.

Root That part of the tooth below the crown which is anchored to the jaw.

Root surface The surface of the root of a tooth.

Socioeconomic Indices for Areas (SEIFA) A set of four indices derived by the Australian Bureau of Statistics from population census data to measure aspects of socioeconomic position for geographic areas.

Socioeconomic position Descriptive term for a position in society and usually measured by attributes such as income, education, occupation or characteristics of residential area.

State/territory Geographic regions of Australia – the nation has six states and two territories.

Statistical significance An indication from a statistical test that an observed association is unlikely (usually less than 5% probability) to be due to chance created when a random sample of people is selected from a population.

Trend The general direction in which change over time is observed.

Weights Numbers applied to groups of study participants to correct for differences in probability of selection and in participation.

Wisdom tooth One of four molars, each positioned at the back of the mouth.

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