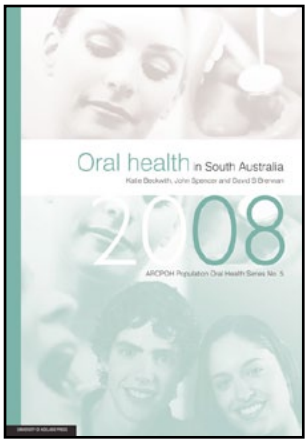

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Oral health in South Australia

Katie Beckwith, John Spencer and David S Brennan

2008

ARCPOH Population Oral Health Series No. 8

Oral health in South Australia 2008 provides a comprehensive summary of the oral health of South Australian residents. This publication was developed from a range of surveys conducted by the Australian Research Centre for Population Oral Health (ARCPOH) and administrative data provided by state dental services.

Information provided in this publication includes data on caries experience and periodontal diseases of children and adults, tooth retention and loss among adults, access to dental care, cost of dental care and the dental labour force. Information on the oral health of Indigenous children and adults is also provided.

The publication highlights the recent increase in the level of dental decay among primary and secondary school children, the low percentage of school aged children visiting the school dental service, the extent of individual out-of-pocket expenditure on dental services, and issues with access to dentists and dental hygienists outside of the Adelaide metropolitan area.

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Oral Health in South Australia 2008

The Australian Research Centre for Population Oral health (ARCPOH) is within the Dental School at The University of Adelaide. ARCPOH includes the two academic areas of Social and Preventative Dentistry and Oral Epidemiology as well as The Australian Institute for Health and Welfare (AIHW) Dental Statistics and Research Unit. ARCPOH was established by The University of Adelaide in 2001 to undertake research and associated research training of the highest quality in population oral health, through the collaborative efforts of those having relevant expertise within the University, other universities, industry, government bodies and the profession.

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Australian Research Centre for Population Oral Health

ARCPOH
Australian Research Centre for
POPULATION ORAL HEALTH

Oral Health in South Australia 2008

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Summary

This report summarises key findings on the state of oral health of the South Australian population. Data have been sourced from surveys managed by the Australian Research Centre of Population Oral Health (ARCPOH) and administrative data provided by the South Australian Dental Service.

Caries experience

The percentage of deciduous teeth in children affected by caries increased across older age groups, as did the percentage of children with caries experience in their permanent teeth.

Among 6–9-year-olds mean dmft increased from 1998 to 2008. Before 1998, dmft had shown a consistent decrease since 1992. The changes over time to the percentage of children with caries experience in their deciduous teeth mirrored the pattern seen for mean dmft. DMFT in children aged 8–15 years showed a decrease from 1992 to the late 1990s, after which mean DMFT increased. The percentage of children aged 8–15 years with caries experience in their permanent teeth also decreased between 1992 and the late 1990s, followed by an increase.

Indigenous children had consistently higher dmft and DMFT than non-Indigenous children. By age 14 years, DMFT was one tooth higher among Indigenous than non-Indigenous children.

Among adults, 25–44 year-olds had the least healthy teeth with respect to untreated decay. The percentage of people with untreated decay was highest among this age group, as was the average number of teeth affected by untreated decay.

Comparisons between different groups within the population showed that mean DMFT was higher among females than males, non-Adelaide residents than Adelaide residents, cardholders than non-cardholders and people with dental insurance than those without dental insurance. Cardholders had more than two and a half times the number if missing teeth than non-cardholders.

The percentage of people with untreated decay was higher among males than females, non-Adelaide residents than Adelaide residents, cardholders than non-cardholders and people without dental insurance than those with dental insurance.

Among adults attending public dental care, mean DMFT improved between 2001–02 and 2004–06 for people aged 20–64 years. The improvement was greater for the younger age groups.

Non-Adelaide residents attending public dental care had consistently higher mean DMFT than Adelaide residents. Among persons who attended public dental care for general dental care mean DMFT increased across age groups. The highest prevalence of missing teeth was among those aged 65 years and older, while untreated decay was more prevalent in younger age groups.

Mean DMFT among Indigenous adults increased across older age groups. Untreated decay accounted for more than half of the DMFT among 18–24-year-olds; however, among those aged 45 years and older, over two-thirds of mean DMFT was due to teeth missing.

Periodontal disease

The percentage of children with healthy gums decreased across older age groups. By age 15 years, half of all children had bleeding or calculus. Non-Indigenous children had a higher percentage with healthy gums than Indigenous children. Indigenous children had a consistently higher prevalence of bleeding than non-Indigenous children.

Among adults, evidence of poor periodontal health increased across older age groups. Females demonstrated better periodontal health than males, although the percentage with deep periodontal pockets was almost equal for males and females. Adelaide residents had almost twice as high a prevalence of periodontal disease as non-Adelaide residents.

Non-cardholders showed evidence of better periodontal health than cardholders; in particular, the prevalence of periodontal disease among non-cardholders was almost two and a half times less than for cardholders. Uninsured people had twice as high a prevalence of periodontal disease as those with dental insurance.

Periodontal pockets of 4–5 mm or 6 mm or more increased consistently across older age groups among Indigenous and non-Indigenous persons. The percentage of Indigenous persons with pockets 6+ mm was twice that for non-Indigenous in both ages 25–44 and 45+ years.

Among adults attending public dental care, the overall percentage of people with healthy gums increased slightly between 2001–02 and 2004–06. The percentage of adults with pockets of 4–5 mm decreased in all groups in 2004–06, but the decreases were small. Changes between age groups for other measurements were inconsistent.

Tooth retention and loss

Edentulism is higher in older age groups. Females had a higher prevalence of edentulism than males over the age of 65 years, but there was no difference between males and females aged 45–64 years. Comparisons between population groups showed that lower percentages of edentulism were seem among non-cardholders than cardholders, and Adelaide than non-Adelaide residents. Edentulism decreased consistently from 1979 to 2005, but showed an increase of 0.4% in 2008.

As with edentulism, the percentage of people wearing dentures increased across older age groups. A higher percentage of females than males wore dentures, as did cardholders than non-cardholders. Among 45–64-year-olds, a greater percentage of Adelaide residents wore dentures than non-Adelaide residents, but a lesser percentage among those aged 65 years and older.

The number of teeth present tended to decline across older age groups. A larger percentage of males retained a greater number of teeth than did females, as did non-cardholders compared with cardholders. There was no clear distinction in tooth retention between Adelaide and non-Adelaide residents.

The average number of missing teeth increased across older age groups. Between population groups the average number of missing teeth was greater for females than males, cardholders than non-cardholders, and non-Adelaide than Adelaide residents. The biggest difference for each comparison was seen among 45–64-year-olds.

Preventive interventions

Children with caries experience had a higher prevalence of fissure sealants than those with no DMFT. Both the prevalence of fissure-sealed teeth and the average number of fissure sealants per child have shown a general decrease over time, from 1992 until 2003, at which time both measures began to increase. This increase was particularly evident among 8–11-year-olds.

Use of dental services

A significantly higher percentage of dentate than edentulous individuals attended a dentist within the previous 12 months. The prevalence of attendance at a dentist in the previous 12 months was highest among 5–11 and 12–17-year-olds. A significantly higher percentage of 45–64-year-olds than those aged 65 years and older visited a dentist more than 1 year but less than 2 years ago. Persons aged 18–24 and 25–44 years had the highest percentage of people who had not visited a dentist in the previous 2 years.

Non-cardholders had a higher percentage than cardholders visiting a dentist in the previous 12 months and a lower percentage not visiting in the last two years. Males had a significantly higher percentage than females who had not visited a dentist in the previous 2 years, as did non-Adelaide residents compared with Adelaide residents.

Persons aged 25–44 years visited the dentist least frequently, with 37.1% usually visiting less than once every 2 years. The majority (76.4%) of 5–11-year-olds usually had a dentist visit at least once a year, as did 12–17-year-olds (72.8%).

Comparisons between population groups showed that cardholders tended to visit a dentist less frequently than non-cardholders, males less frequently than females, and non-Adelaide residents less frequently than Adelaide residents.

The majority of people in all age groups attended a private practice at their last dental visit. The percentage of people who attended a public practice was highest among those aged 65 years and older followed by 18–24-year-olds. The School Dental Service was attended by 5–11 and 12–17-year-olds. For a small percentage of 18–24-year-olds it was their place of last visit.

Differences between population groups showed that cardholders visited a public clinic for their last dental visit more frequently than non-cardholders, and non-Adelaide residents attended a public clinic more frequently than Adelaide residents. There was little difference between males and females aged 18 years or older; however in children aged 5 – 17 years males had attended a public clinic more frequently than females.

A higher percentage of non-cardholders than cardholders usually visited a dentist for a check-up in all age groups. Of persons who attended a dentist in the previous 12 months, the percentage receiving a scale and clean or fillings tended to increase across older age groups. The prevalence of extractions fluctuated across age groups, with the highest percentage received by 25–44-year-olds (24.1%).

A higher percentage of cardholders than non-cardholders aged 5 – 17 and 18+ years received extractions and fillings in the previous 12 months, but a lower percentage received a scale and clean. The percentages of males and females who received a scale and clean in the previous 12 months were about equal. A greater percentage of males than females received fillings, while a greater percentage of females than males received extractions. Extractions and fillings were more prevalent among non-Adelaide residents than Adelaide residents, while the opposite was true for scale and clean. The percentage of extractions or fillings received was lower for persons who usually visited a dentist for a check-up than persons who usually visited for a problem. The percentage of persons who received a scale and clean was higher among those who usually visited a dentist for a check-up than for a problem.

Social impact of oral problems

The prevalence of toothache decreased across older age groups. The percentage of persons uncomfortable about their dental appearance peaked for ages 25–44 years, then declined across older age groups. A higher percentage of edentulous than dentate people reported discomfort with their dental appearance. The percentage of dentate adults aged 18+ years who had avoided certain foods in the previous 12 months was lower among the older age groups than the younger. Children aged 5 – 11 years had the lowest percentage overall. Edentulous people reported avoiding foods more frequently than dentate persons, with the frequency increasing across older age groups.

Cost of dental care

The percentage of people who had dental insurance decreased across older age groups until ages 18–24 years, after which coverage peaked again at ages 45–64 years. A comparison between population groups showed that a higher percentage of dentate than edentulous people and a higher percentage of non-cardholders than cardholders had dental insurance.

Among dentate people, the percentage of people with dental insurance was higher among non-cardholders than cardholders, females than males, and Adelaide than non-Adelaide residents.

The percentage of people who had avoided or delayed a dental visit due to cost peaked at ages 25–44 years for cardholders and 18–24 years for non-cardholders, after which the percentage declined. In comparison with non-cardholders, cardholders had higher percentage of persons in each age group stating that cost had prevented recommended dental treatment. The percentage of people who would have a lot of difficulty paying either a $100 or a $150 dental bill was higher among cardholders than non-cardholders in all age groups. The smallest difference was seen among 12–17-year-olds, as the percentage of non-cardholders reporting a difficulty peaked in this age group for both payment amounts. Among cardholders, the percentage peaked at ages 25–44 years.

Recurrent expenditure on dental services has increased every year from 2004–05 to 2007–08 from each source of funds. In 2007–08 individual out-of-pocket expenses accounted for the largest portion of dental expenditure.

The percentage of total health expenditure that was spent on dental services was less in South Australia than in Australia for each year from 2004–05 to 2007–08. The percentage of recurrent state and local government health expenditure spent on dental services has decreased from 3.3% in 2004–05 to 2.5% in 2007–08.

Dental labour force

Overall, there were 826 dentists, 121 therapists, 154 hygienists and 31 prosthetists practising in South Australia. Adelaide had two and a half times more dentists and four times more hygienists per 100,000 population than the rest-of-state. The rest-of-state had about two more therapists per 100,000 population than Adelaide, and about the same number of prosthetists. The majority of practising dentists were employed in general practice (78%), followed by specialist practice (12%) and teaching/education (5%). Orthodontics attracted the greatest number of practising dentists in a specialist/restricted practice, followed by oral and maxillofacial surgery. The majority (80%) of practising dentists were employed in private practice. In the public sector the highest percentage of practising dentists was employed in the Community Dental Service, followed by tertiary education and the dental hospital. In all areas, specialties or restricted practices, and sectors male dentists outnumbered female dentists, with the only exception being paediatric dentistry.

1 Introduction

Oral health is an integral aspect of general health, and poor oral health is likely to exist when general health is poor and visa versa (AHMAC 2001). Oral health is a standard of health of the oral and related tissues that enable an individual to eat, speak and socialise without active disease, discomfort or embarrassment (UK Department of Health 1994).

Oral diseases are widespread but are largely preventable through population-level interventions, good personal oral hygiene and regular, preventive dental care. Better oral health should be a significant public health goal, and good dental care should be a significant health service goal.

This report summarises key findings on the state of oral health of the South Australian population. Data have been sourced from surveys managed by the Australian Research Centre of Population Oral Health (ARCPOH) and administrative data provided by the South Australian Dental Service. Topics included in this report are described below.

Caries experience and periodontal disease

Dental caries is the most prevalent, and periodontal diseases the fifth most prevalent, health problem among Australians. About 90% of all tooth loss can be attributed to these two health problems (AHMAC 2001). Data are presented on the dental caries experience and periodontal health of children, young adults and adult concession cardholders attending publicly funded dental care.

Deciduous caries experience is recorded as the number of deciduous teeth that are either decayed, missing because of dental caries or filled because of dental caries. It is based on the World Health Organization protocol (WHO 1997) with additional guidelines from Palmer et al. (1984). Permanent caries experience is recorded as the number of permanent teeth that are either decayed, missing because of dental caries or filled because of dental caries, and is also based on the WHO protocol (WHO 1997). Two measures of periodontal health are used in this report: the Community Periodontal Index (CPI) developed by the WHO, and the definition of periodontal disease as defined by the Centers for Disease Control and Prevention (CDC). The CPI is a numerical rating scale used for classifying the periodontal status of a person with a single figure that takes into consideration prevalence as well as severity of the condition. It is based upon probing measurements of periodontal pockets and on gingival tissue status. People are categorised according to their most severe periodontal condition. The CDC defines periodontal disease using a combination of deep periodontal pockets, clinical attachment loss and the number of sites affected (Page & Eke 2007). The second definition represents a new standard in assessing periodontal health in population oral health research.

Indigenous oral health

The health status of Indigenous Australians is generally worse than that of other Australians. While some historical reports indicated an advantage in terms of oral health, recent studies have shown high experience of dental decay among Indigenous children and high levels of tooth loss among adults. Data on the caries experience and prevalence of periodontal conditions for Indigenous children and adults are presented in this report.

Use of dental services

Many factors influence how frequently individuals use dental services. Comparisons of the use of dental services including time since last dental visit, usual dental visiting pattern and place of last dental visit are presented by age, sex and cardholder status. A cardholder is defined as a person who has a Pensioner Concession Card or Health Care Card. Possession of one of these cards entitles an adult to publicly funded care.

A person's reason for seeking dental care influences the type of care they are likely to receive and the level of untreated problems they may have at any time. Individuals who visit a dental professional for the purpose of a routine dental check-up are most likely to benefit from early detection and treatment, and to receive preventive services. Conversely, those who seek care when they are experiencing a dental problem may receive less complete treatment, and are less likely to receive preventive services. Comparisons of the reason for visiting a dentist are presented by age and cardholder status.

Generally, people who seek regular and routine dental care should report low levels of extractions and relatively low levels of fillings. Comparisons of the dental treatment received for dentate persons visiting a dentist in the previous 12 months are presented by age, sex and cardholder status.

Social impact of oral problems

Poor oral health can affect a person's quality of life. This topic investigates the prevalence of people experiencing toothache, being uncomfortable with their dental appearance, and avoiding certain foods due to poor oral health.

Cost of dental care

Financial burden is one often-cited reason why individuals avoid or delay seeking dental care or are unable to proceed with recommended dental care. This report presents a number of measures that assess the affordability and financial burden of dental care and presents data on the number of South Australians covered by dental insurance. Expenditure on dental services by government and private funding sources is also presented. Expenditure data were sourced from the Australian Institute of Health and Welfare (AIHW).

Dental labour force

The dental labour force, consisting of registered dentists, dental therapists, dental hygienists and dental prosthetists, has a vital role to play in the improvement of oral health of South Australians. This report provides data on the number of dental practitioners by demographic and geographic characteristics, and the area and type of practice in which they were employed.

2 Data sources

The data presented in this report are sourced from the following surveys:

- Child Dental Health Survey
- National Survey of Adult Oral Health
- Adult Dental Programs Survey
- National Dental Telephone Interview Survey
- National Dental Labour Force Data Collection.

Child Dental Health Survey

Purpose

The Child Dental Health Survey (CDHS) provides time-series data on the oral health status of Australian school students attending the School Dental Service. The aims of the survey are to:

- maintain the time-series of statistics providing annual estimates of children's oral health status
- examine temporal changes in oral health status among children
- examine the distribution of oral health status by geographic location and demographic factors
- identify high-risk groups according to geographic location and demographic status.

Data collection

Data on the oral health of children attending the South Australian School Dental Service are collected through routine dental examinations undertaken by dental therapists and dentists. A count of the number of teeth that were decayed, missing or filled due to caries is collected to provide a measure of children's cumulative experience in dental decay. Separate data are collected for children's deciduous teeth, reported as dmft, and permanent teeth, reported as DMFT.

Data are entered into the TITANIUM Management Information System by the School Dental Service clinics, and are supplied to the AIHW Dental Statistics and Research Unit for processing and analysis.

Sampling procedure and weighting

The target population for CDHS was children attending School Dental Service clinics in South Australia. Prior to 2001 a sample of children attending the School Dental Service in a particular calendar year were randomly selected by including children whose birthday fell on designated dates of each month.

Data were weighted to adjust for the different probabilities of selection of children in clinics across South Australia, and to reflect the age by sex estimated residential population (ERP) estimates produced by the Australian Bureau of Statistics (ABS) for each statistical division within South Australia.

From mid 2001, data were collected from all children attending the South Australian School Dental Service and were weighted to reflect the appropriate ERP estimates for each statistical division.

National Survey of Adult Oral Health

Purpose

The purpose of this report is to provide a descriptive 'snapshot' of oral health in the adult population of South Australia. The findings were intended to provide up-to-date evidence that can contribute to the development of oral health policies and programs in South Australia. Up-to-date information about population oral health is important because oral diseases have broad implications for the health of the public.

Data collection

Information was collected using interviews and standardised dental examinations that were conducted among sample of residents aged 15 years or older.

Self-reported information about oral health and characteristics associated with it was obtained though telephone interviews.

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.

Sampling procedure and weighting

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

- 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' (EWP) in each postcode.
- A systematic sample of households listed in the EWP was selected for each sampled postcode. Thirty households per metropolitan postcode and 40 households per ex-metropolitan postcode were selected.

- One person aged 15 years or older was randomly selected per household. In households with only one person aged 15 years or older, that person was selected. In other households telephone interviewers asked for the name of the person aged 15 years or older who most recently had had a birthday and the name of the person aged 15 years or older who would next have a birthday.

Data were weighted to compensate for individuals' different probabilities of selection and survey participation rates. For the telephone interview survey, weights were adjusted to ensure that survey estimates were consistent with the 2005 ABS ERP data. For the oral examination survey, which was restricted to dentate people aged 15 years or older, estimates of the dentate population were derived from the telephone interview survey and used to derive examination weights.

Adult Dental Programs Survey

Purpose

All Australian states and territories provide public dental services, largely by publicly employed dentists in government clinics at minimal or no cost to the patient. The purpose of the Adult Dental Programs Survey (ADPS) is to monitor the oral health of patients attending public dental care across Australia. Patients eligible for public dental care are primarily holders of government entitlement cards such as aged pensioners and the unemployed, and are of particular interest as they represent a financially disadvantaged group of adults among the Australian population.

Data collection

Data were collected from a sample of patients undergoing publicly funded dental care primarily by staff of state or territory dental services. Examining dentists recorded the oral health status of each patient including caries experience, periodontal health, demographic and use characteristics, and services received throughout a course of care.

Sampling procedure and weighting

The target population for ADPS comprised adults aged 18 years or older attending public dental care in South Australia. The survey was conducted in 1995–96, 2001–02 and 2006, with data obtained from 753 patients in 1995–96, 1,904 patients in 2001–02 and 7,364 patients in 2006. Data were collected from a random sample of adult patients at the beginning of a course of care. In 1995–96 and 2001–02 patients were selected by identifying people with designated birth dates. In 2006 a computer management information system (MIS) was used. Sampling was based on ongoing recording of each general care patient and sampling of one emergency care patient per day.

All publicly funded dental clinics in South Australia were included in the survey. In 1995–96 and 2001–02 data were not weighted as the sample design ensured that all patients attending publicly funded dental care in South Australia within a survey year had an equal chance of selection. In 2006 data were weighted using the estimated number of persons aged 15 years or older from the 2006 Census (ABS 2007). Age-specific estimates were obtained over a number of strata, such as type of course of care (i.e. emergency or general) or sex of patient.

National Dental Telephone Interview Survey

Purpose

The purposes of the National Dental Telephone Interview Survey (NDTIS) are to:

- collect basic features of oral health and dental care within the Australian population
- provide information on the broader parameters of oral health and access to services
- monitor the extent of social inequalities within the dental sector
- investigate the underlying reasons behind dental behaviours, and the consequences of these behaviours.

Data collection

Data were collected from a random sample of persons across Australia via telephone interview. The Dental Statistics and Research Unit was responsible for the selection and management of the data collection phase. Experienced interviewers conducted telephone interviews using computer-assisted telephone interview software. Data collected included measures of self-reported oral health status, use of and access to dental services, social impact of oral health, financial burden of dental care, and dental insurance.

Sampling procedure and weighting

The 2008 National Dental Telephone Interview Survey involved a random sample of Australian residents aged five years and over in all States and Territories. The sample was selected using a two-stage stratified design. The first stage of selection involved selecting a sample of households from the 'electronic white pages' (EWP). To be able to access the latest version of the EWP an initial sample of people aged 18 years and over was selected from the Commonwealth electoral roll by the Australian Electoral Commission (AEC). The AEC sample containing full name and address details was then matched to the EWP by SENSIS Business Information Services using their software product MacroMatch®. Records from the AEC sample that matched to the EWP by surname and address and returned a telephone number (either landline or mobile number) formed the basis of the 2008 NDTIS sampling frame. Households listed on this frame were stratified by state and region (metropolitan/non-metropolitan) and a systematic sample of households was selected within each stratum. To allow for non-response and non-contacts, households were over-sampled to ensure an adequate sample size within each stratum. Once telephone contact was made with a selected household, the second stage of selection involved randomly selecting one person aged 5 years or older from the household.

A total of 783 people across South Australia participated in the 2008 survey, representing a participation rate of 67%.

Data were weighted to account for a person's probability of selection, which was based on the stratum they were assigned to and the number of persons resident in their household who were eligible for selection. Data were further adjusted to reflect the age by sex ERP estimates produced by the ABS.

Dental Labour Force Data Collection

Purpose

The main purpose of the Dental Labour Force Data Collection is to provide national labour force statistics on registered dentists, dental therapists, dental hygienists and dental prosthetists. Monitoring the dental labour force over time enables appropriate planning and informed decision-making by all involved in the dental profession. In addition, survey data have enabled the projection of growth in the South Australian dental labour force and modelling of the future capacity of the dental labour force to supply dental visits.

Data collection

The data collected were part of a national data set agreed by the Australian Health Minister's Advisory Council to facilitate appropriate health planning and administration.
A questionnaire is included with the annual re-registration form sent to dental practitioners by each state dental board.

Data collected from participants includes practising status, hours worked, area and type of practice, specialty area and geographic location. Dental boards provided demographic characteristics, place and year of initial qualification, and year of first registration.

Sampling procedure and weighting

All dental practitioners registered with the Dental Board of South Australia receive a mailed-out questionnaire annually. In 2006, 72.5% of registered practitioners participated in the data collection. Data were weighted to adjust for non-response using dental board registration data.

3 Caries experience

Caries experience of children

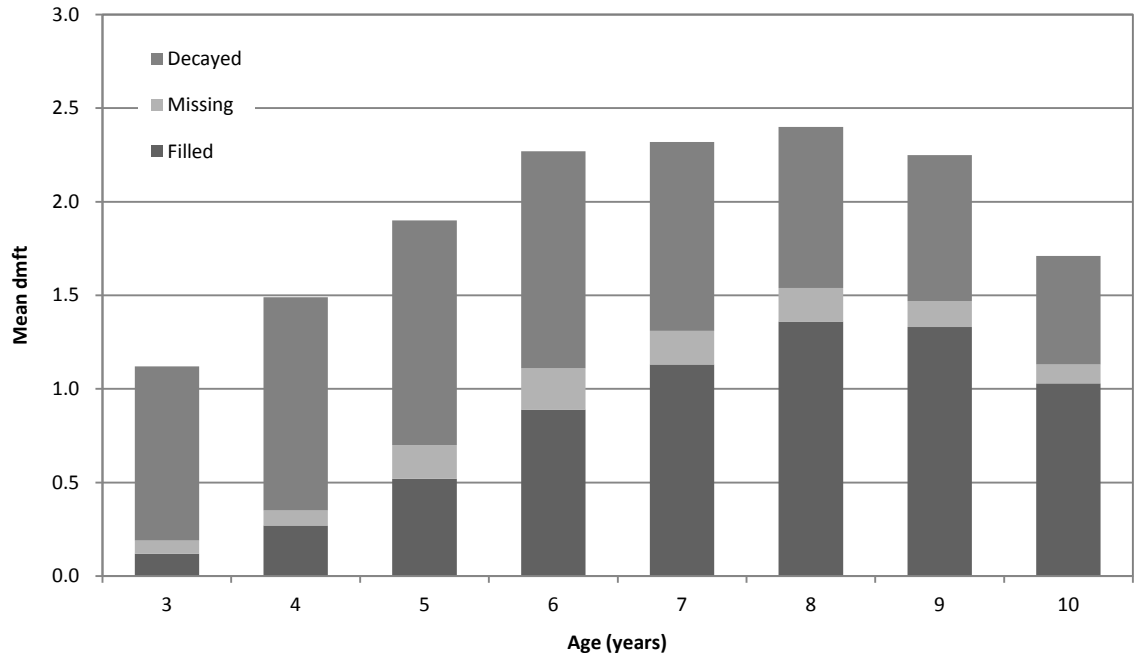

Figure 3.1: Deciduous dentition: mean dmft by age, children attending School Dental Service

Mean dmft	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years
Decayed	0.93	1.14	1.20	1.16	1.01	0.86	0.78	0.58
Missing	0.07	0.08	0.18	0.22	0.18	0.18	0.14	0.10
Filled	0.12	0.27	0.52	0.89	1.13	1.36	1.33	1.03
Total	**1.12**	**1.49**	**1.89**	**2.26**	**2.32**	**2.40**	**2.25**	**1.71**
Mean number of teeth present	19.80	19.81	19.27	17.16	14.32	12.25	10.59	7.89

Source: Child Dental Health Survey, 2008

- Eight-year-old children had the highest mean dmft score (2.4), with caries experience in about 20% of the mean number of present deciduous teeth.
- Children aged 4–5 years experienced the highest levels of untreated decay and fewer filled teeth. However, across older ages, the number of teeth with untreated decay decreased and the number of filled teeth increased, reflecting treatment provided by the School Dental Service.
- Children aged 7 years or older had at least one filling in their deciduous teeth.

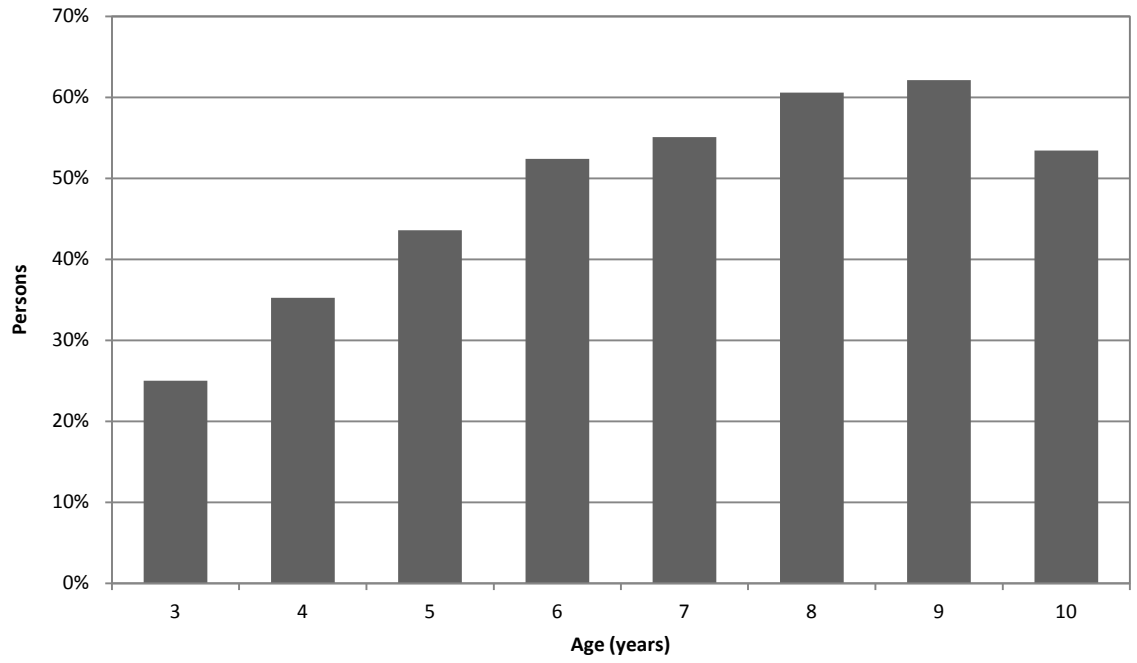

Figure 3.2: Deciduous dentition: percentage of children with dmft > 0 by age, children attending School Dental Service

Persons (%)	3 years	4 years	5 years	6 years	7 years	8 years	9 years	10 years
With dmft > 0	25.0	35.3	43.6	52.4	55.1	60.6	62.1	53.4
Mean number of teeth present	19.8	19.8	19.3	17.2	14.3	12.3	10.6	7.9

Source: Child Dental Health Survey, 2008

- One in four 3-year-olds and one in three 4-year-olds who visited the School Dental Service had some caries experience in their deciduous teeth.
- The percentage of children with caries experience increased across older age groups to a peak of 62.1% at age 9 years. From age 10 years onwards, due to the exfoliation of deciduous teeth, the percentage of children with caries experience started to decrease.

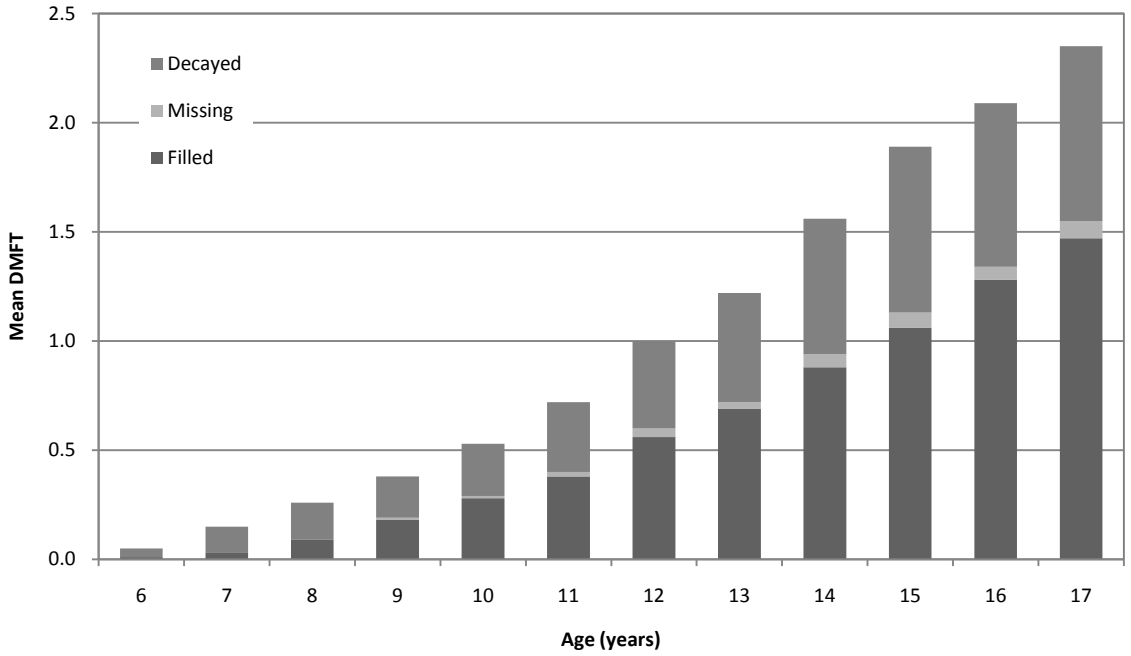

Figure 3.3: Permanent dentition: mean DMFT by age, children attending School Dental Service

Mean dmft	6 years	7 years	8 years	9 years	10 years	11 years	12 years	13 years	14 years	15 years	16 years	17 years
Decayed	0.04	0.12	0.17	0.19	0.24	0.32	0.40	0.50	0.62	0.76	0.75	0.80
Missing	0.00	0.00	0.00	0.01	0.01	0.02	0.04	0.03	0.06	0.07	0.06	0.08
Filled	0.01	0.03	0.09	0.18	0.28	0.38	0.56	0.69	0.88	1.06	1.28	1.47
Total	**0.05**	**0.16**	**0.26**	**0.38**	**0.53**	**0.72**	**1.00**	**1.22**	**1.56**	**1.89**	**2.09**	**2.35**
Mean number of teeth present	4.94	8.74	11.34	13.38	16.61	20.73	24.37	26.36	27.18	27.51	27.72	27.97

Source: Child Dental Health Survey, 2008

- Mean DMFT among children attending the School Dental Service gradually increased across older age groups as the number of permanent teeth increased.
- The number of teeth with untreated decay in 6-year-olds accounted for 80% of their caries experience; 12-year-olds had 0.40 permanent teeth with untreated decay, accounting for 40% of their caries experience. The number of teeth with untreated decay reached a peak of 0.80 for those aged 17 years.

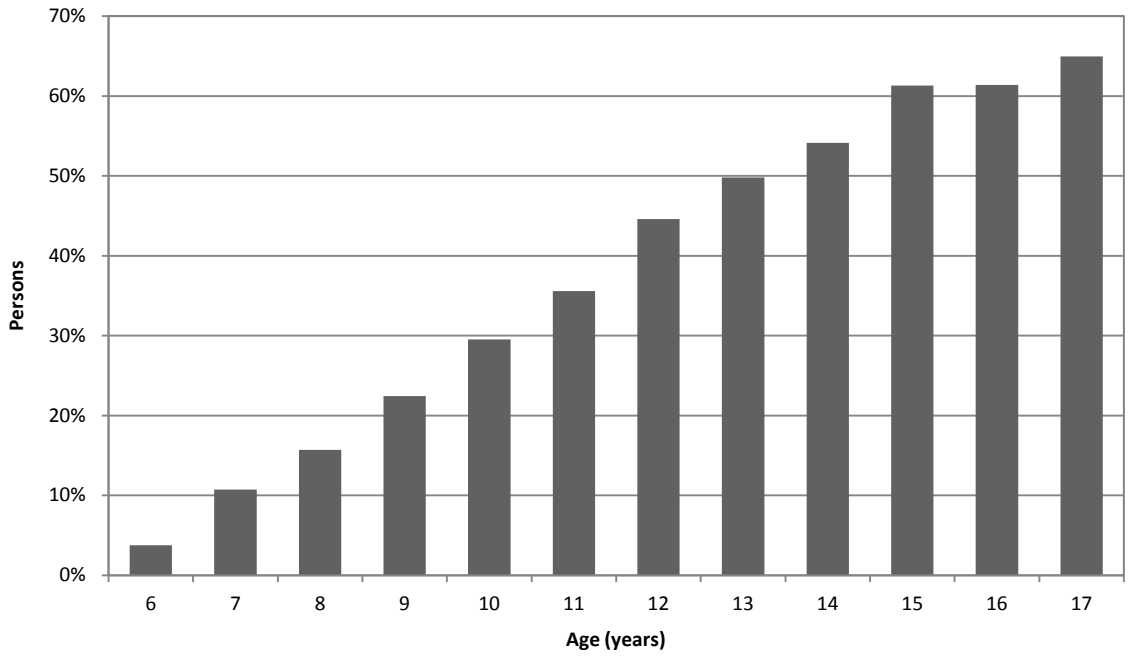

Figure 3.4: Permanent dentition: percentage of children with DMFT > 0 by age, children attending School Dental Service

Persons (%)	6 years	7 years	8 years	9 years	10 years	11 years	12 years	13 years	14 years	15 years	16 years	17 years
With DMFT > 0	3.8	10.7	15.7	22.4	29.5	35.6	44.6	49.8	54.1	61.3	61.4	65.0
Mean number of teeth present	4.9	8.7	11.3	13.4	16.6	20.7	24.4	26.4	27.2	27.5	27.7	28.0

Source: Child Dental Health Survey, 2008

- The percentage of children with caries experience in their permanent teeth increased steadily across older age groups.
- Nearly 5% of children aged 6 years had experienced caries in their permanent teeth despite having few permanent teeth at this age.
- By 13 years of age, 50% of children had experienced caries in their permanent teeth, increasing to 65% by 17 years.

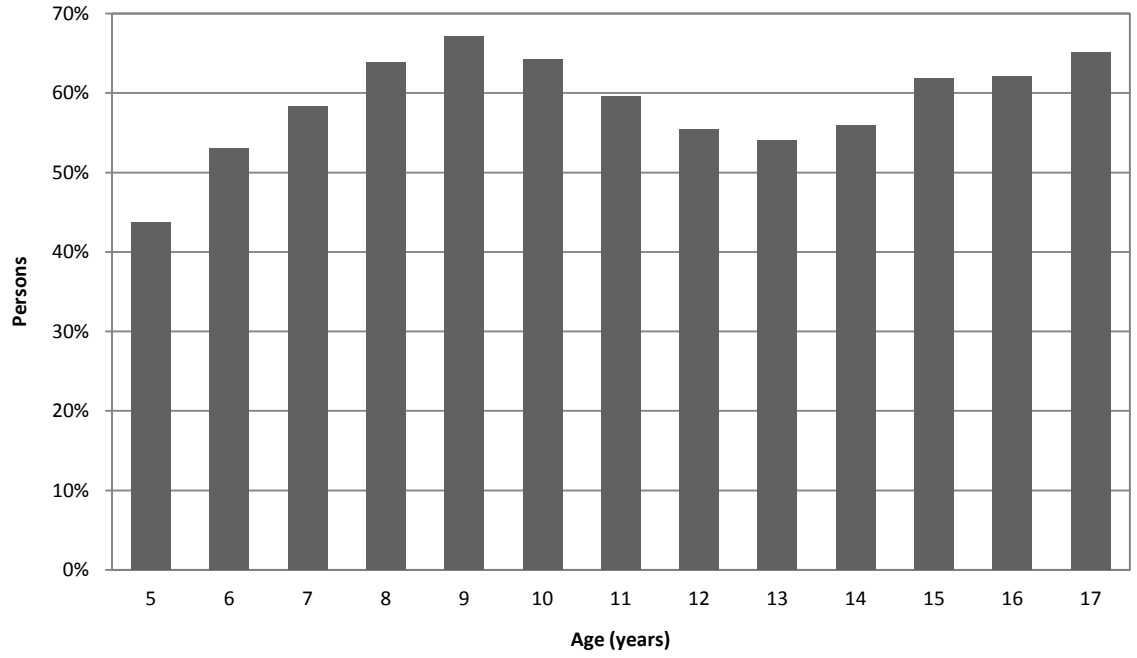

Figure 3.5: Deciduous and permanent dentition: percentage of children with dmft + DMFT > 0 by age, children attending School Dental Service

Persons (%)	5 years	6 years	7 years	8 years	9 years	10 years	11 years	12 years	13 years	14 years	15 years	16 years	17 years
With dmft+DMFT > 0	43.7	53.1	58.4	63.9	67.1	64.3	59.6	55.4	54.1	56.0	61.9	62.1	65.2

Source: Child Dental Health Survey, 2008

- The percentage of children with caries experience in either their deciduous or permanent teeth increased steadily from 43.7% for 5-year-olds to reach a peak (67.1%) for 9-year-olds, then declined to 54.1% for 13-year-olds. This decline is a result of exfoliation of deciduous teeth.
- Beyond 13 years of age, the percentage of caries experience increased steadily to 65.2% for 17-year-olds.

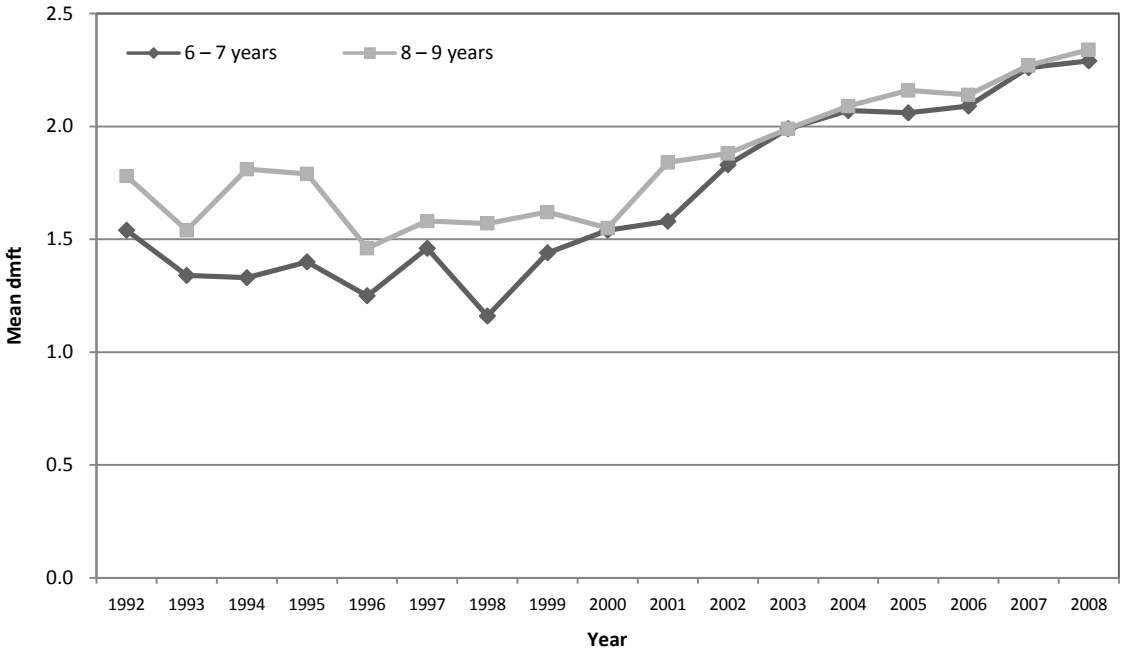

Figure 3.6: Deciduous dentition: mean dmft by age for years 1992–2008, children attending School Dental Service

Mean dmft	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
6–7 years	1.54	1.34	1.33	1.40	1.25	1.46	1.16	1.44	1.54	1.58	1.83	1.99	2.07	2.06	2.09	2.26	2.29
8–9 years	1.78	1.54	1.81	1.79	1.46	1.58	1.57	1.62	1.55	1.84	1.88	1.99	2.09	2.16	2.14	2.27	2.34

Sources: Child Dental Health Surveys, 1992–2008

- The mean dmft score fluctuated from 1992 to the late 1990s and then increased steadily during the period from 2000 to 2008.
- For 6–7-year-olds, the mean dmft increased by over 50%, from 1.16 in 1998 to 2.29 in 2008. For 8–9-year-olds, caries experience increased from 1.46 in 1996 to 2.34 in 2008, a rise of over 60%.

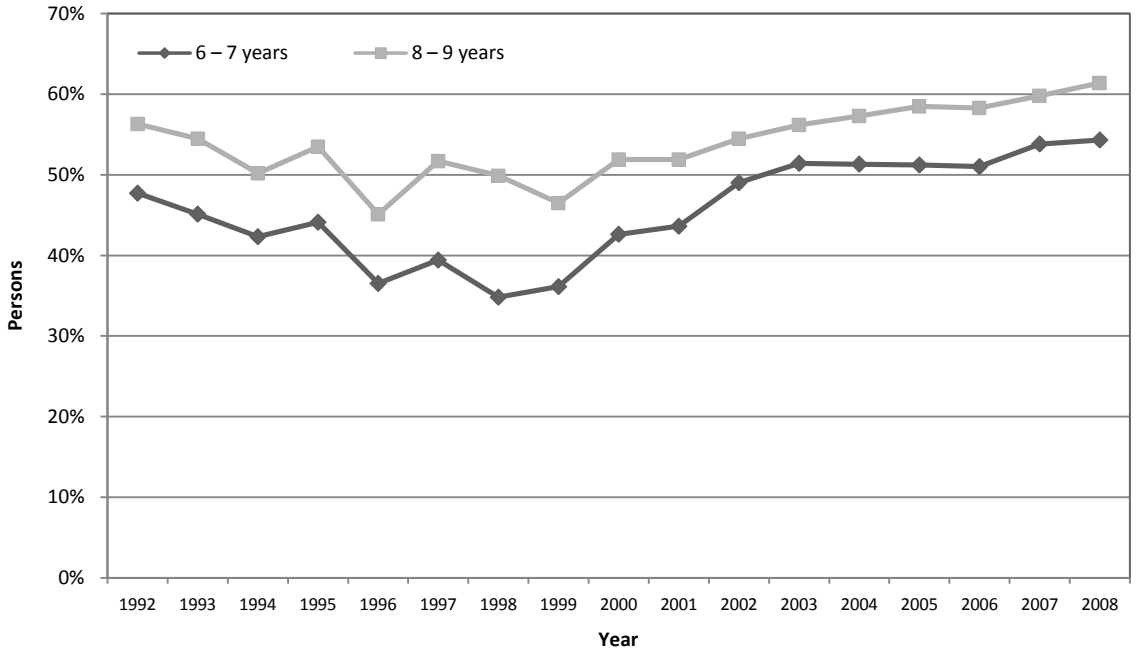

Figure 3.7: Deciduous dentition: percentage of children with dmft > 0 by age for years 1992–2008, children attending School Dental Service

Persons with dmft > 0 (%)	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
6–7 years	47.7	45.1	42.3	44.1	36.5	39.4	34.8	36.1	42.6	43.6	49.0	51.4	51.3	51.2	51.0	53.8	54.3
8–9 years	56.3	54.5	50.2	53.5	45.1	51.7	49.9	46.5	51.9	51.9	54.5	56.2	57.3	58.5	58.3	59.8	61.4

Sources: Child Dental Health Surveys, 1992–2008

- Between 1992 and 1996, the percentage of children with caries experience in their deciduous teeth declined. The percentage fluctuated for the 3 years from 1996 to 1999; however, since 1999 there has been an increase in the number of children with caries experience.
- In 1998, 34.8% of 6–7-year-olds had experienced caries in their deciduous teeth. This number increased to 54.3% in 2008.
- The prevalence of caries experience in 8–9-year-olds increased from 46.1% in 1996 to 61.4% in 2008.

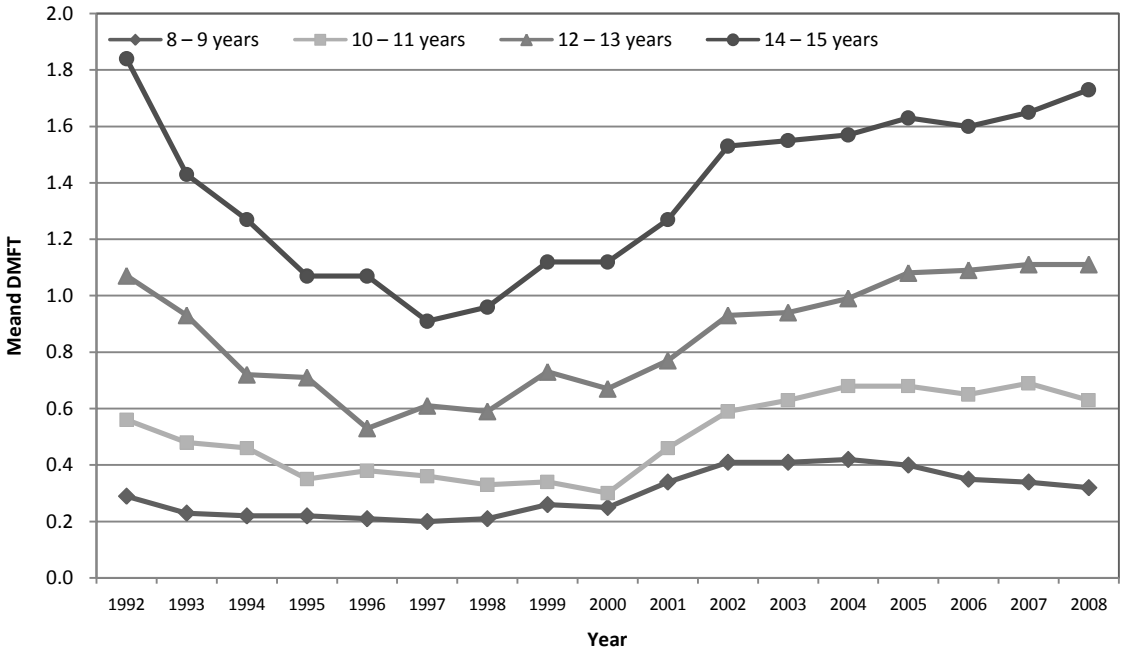

Figure 3.8: Permanent dentition: mean DMFT by age for years 1992–2008, children attending School Dental Service

Mean DMFT	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
8–9 years	0.29	0.23	0.22	0.22	0.21	0.20	0.21	0.26	0.25	0.34	0.41	0.41	0.42	0.40	0.35	0.34	0.32
10–11 years	0.56	0.48	0.46	0.35	0.38	0.36	0.33	0.34	0.30	0.46	0.59	0.63	0.68	0.68	0.65	0.69	0.63
12–13 years	1.07	0.93	0.72	0.71	0.53	0.61	0.59	0.73	0.67	0.77	0.93	0.94	0.99	1.08	1.09	1.11	1.11
14–15 years	1.84	1.43	1.27	1.07	1.07	0.91	0.96	1.12	1.12	1.27	1.53	1.55	1.57	1.63	1.60	1.65	1.73

Sources: Child Dental Health Surveys, 1992–2008

- From 1992 to the mid 1990s, the DMFT score decreased for 8–15-year-old children. The decline was sharpest for 14–15 and 12–13-year-olds than the younger age groups.
- During the 7 years from 1998 to 2005, the mean DMFT scores for children attending the School Dental Service almost doubled for all age groups. From 2005 to 2008, caries experience had started to decline slightly for the 8–9 and 10–11 years age groups.

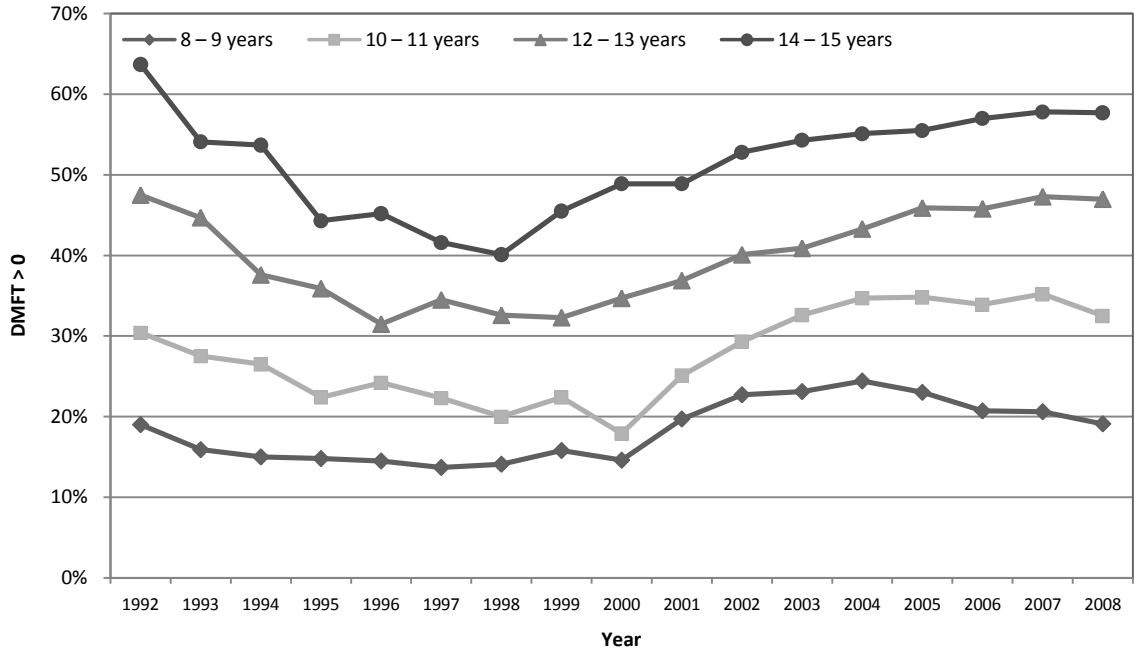

Figure 3.9: Permanent dentition: percentage of children with DMFT > 0 by age for years 1992–2008, children attending School Dental Service

Persons with DMFT > 0 (%)	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
8–9 years	19.0	15.9	15.0	14.8	14.5	13.7	14.1	15.8	14.6	19.7	22.7	23.1	24.4	23.0	20.7	20.6	19.1
10–11 years	30.4	27.5	26.5	22.4	24.2	22.3	20.0	22.4	17.9	25.1	29.3	32.6	34.7	34.8	33.9	35.2	32.5
12–13 years	47.5	44.7	37.6	35.9	31.5	34.5	32.6	32.3	34.7	36.9	40.1	40.9	43.3	45.9	45.8	47.3	47.0
14–15 years	63.7	54.1	53.7	44.3	45.2	41.6	40.1	45.5	48.9	48.9	52.8	54.3	55.1	55.5	57.0	57.8	57.7

Sources: Child Dental Health Surveys, 1992–2008

- Between 1992 and the mid 1990s, the percentage of children with caries experience in their permanent teeth declined across all age groups.
- Since 1998 the percentage of children attending the School Dental Service who have experienced caries in their permanent dentition increased in all age groups; however, from 2005 to 2008, the percentage of children aged 8–9 and 10–11 years slightly decreased.

Caries experience of adults aged 15 years and older

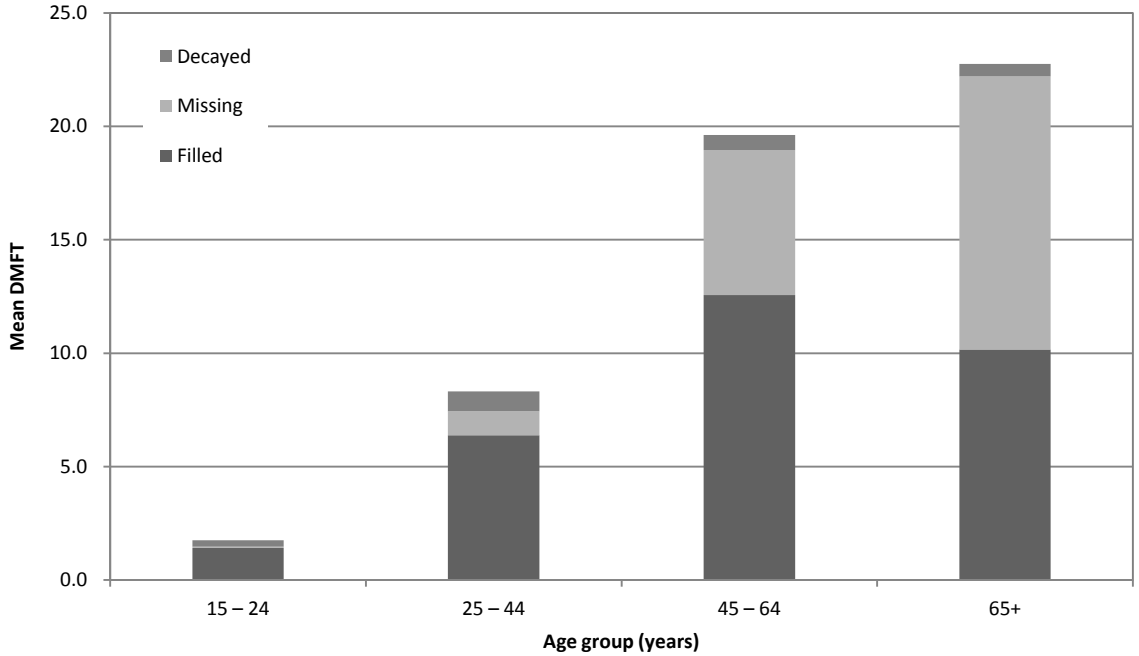

Figure 3.10: Mean DMFT by age, persons aged 15 years and older

Mean DMFT	15–24 years	25–44 years	45–64 years	65+ years	Total
Decayed	0.28	0.87	0.67	0.54	0.66
Missing	0.06	1.05	6.39	12.04	4.08
Filled	1.41	6.38	12.57	10.17	7.97
Total	**1.75**	**8.31**	**19.63**	**22.76**	**12.71**

Source: The National Survey of Adult Oral Health, 2004–06

- Overall, mean DMFT scores show a clear increase across older age groups.
- For 15–24-year-olds, the number of teeth with untreated decay accounts for 16% of DMFT, but only about 3% in those aged 45 years or older.
- The majority of teeth with caries experience for 15–64 year-olds were filled. For those aged 65 years and over, teeth missing due to caries accounted for the majority of the DMFT score.

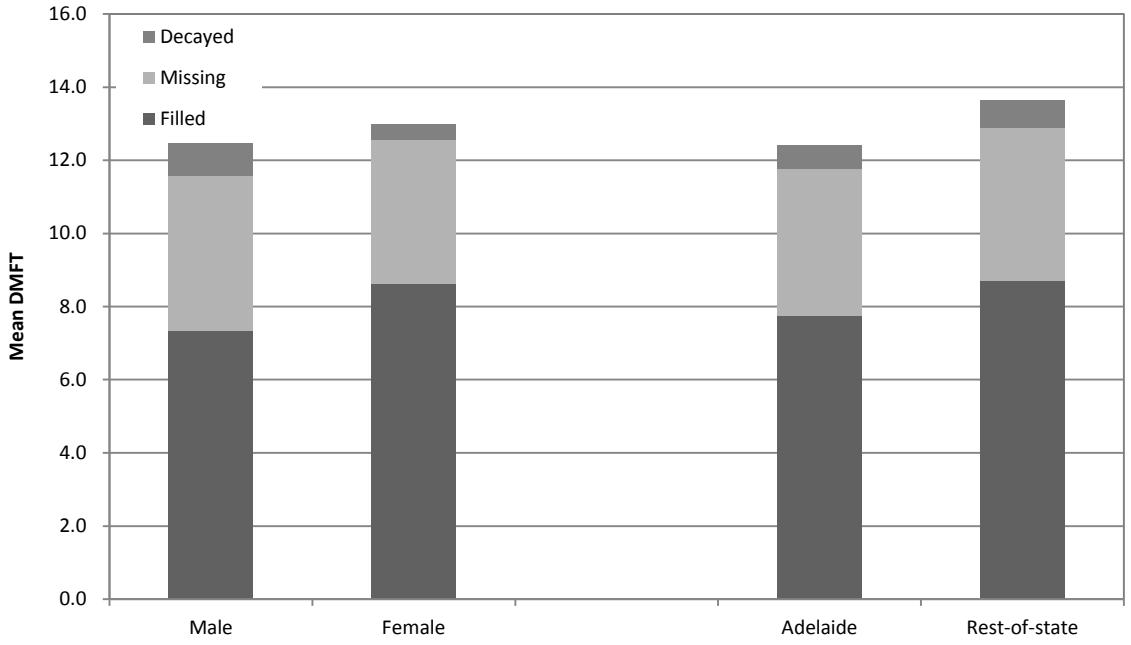

Figure 3.11: Mean DMFT by sex and geographic region (Adelaide/rest-of-state), persons aged 15 years and older

	Sex		Region	
Mean DMFT	**Male**	**Female**	**Adelaide**	**Rest-of-state**
Decayed	0.89	0.42	0.63	0.75
Missing	4.23	3.93	4.04	4.20
Filled	7.34	8.62	7.73	8.69
Total	**12.46**	**12.97**	**12.40**	**13.64**

Source: The National Survey of Adult Oral Health, 2004–06

- Females, on average, had a higher number (8.62) of filled teeth than males (7.34); however, males had more untreated decay and teeth missing due to caries. Overall, females had a higher DMFT score than males.
- Persons living outside Adelaide had a higher DMFT score overall than those living in Adelaide. All three measures were higher for the rest-of-state than for Adelaide.

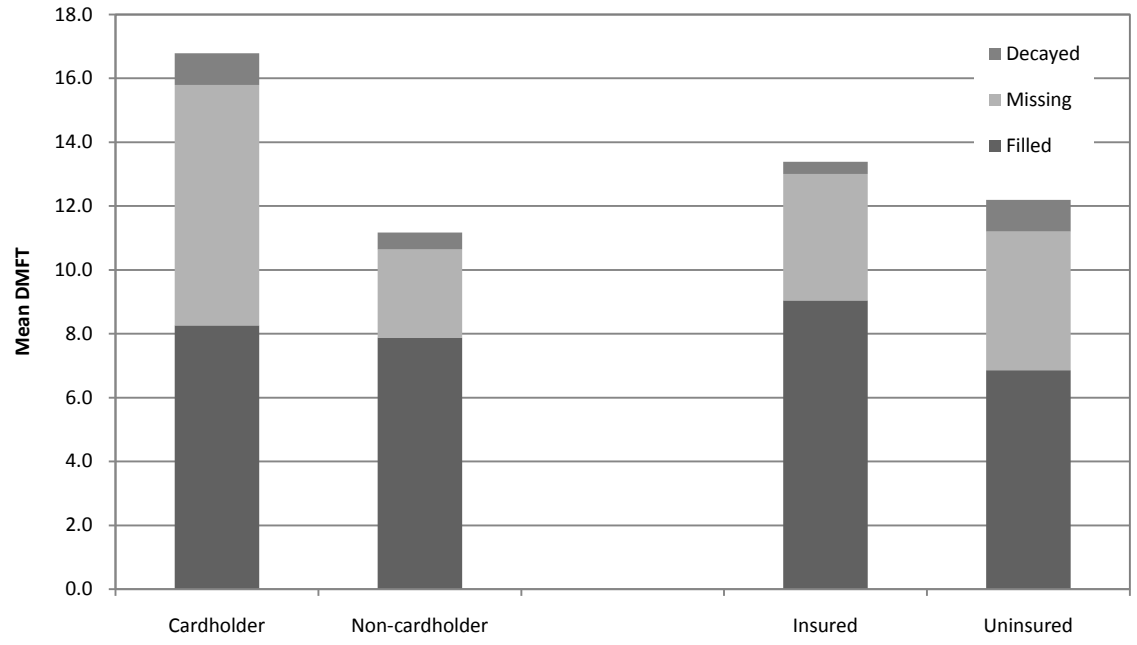

Figure 3.12: Mean DMFT by cardholder status and dental insurance status, persons aged 15 years and older

	Cardholder status		Dental insurance status	
Mean DMFT	**Cardholder**	**Non-cardholder**	**Insured**	**Uninsured**
Decayed	0.99	0.53	0.38	1.00
Missing	7.53	2.76	3.96	4.34
Filled	8.26	7.88	9.05	6.86
Total	**16.79**	**11.17**	**13.39**	**12.19**

Source: The National Survey of Adult Oral Health, 2004–06

- Cardholders had a much higher average number of teeth missing due to caries than non-cardholders (7.53 and 2.76 respectively).
- Among non-cardholders, 71% of DMFT was accounted for by filled teeth; however, among cardholders, only 50% of DMFT presented as filled teeth, and almost as great a percentage (45%) was missing teeth.
- Overall, insured persons had a higher DMFT score than those without dental insurance. This was largely because of the higher level of filled teeth among insured people (9.05) compared with uninsured (6.86).

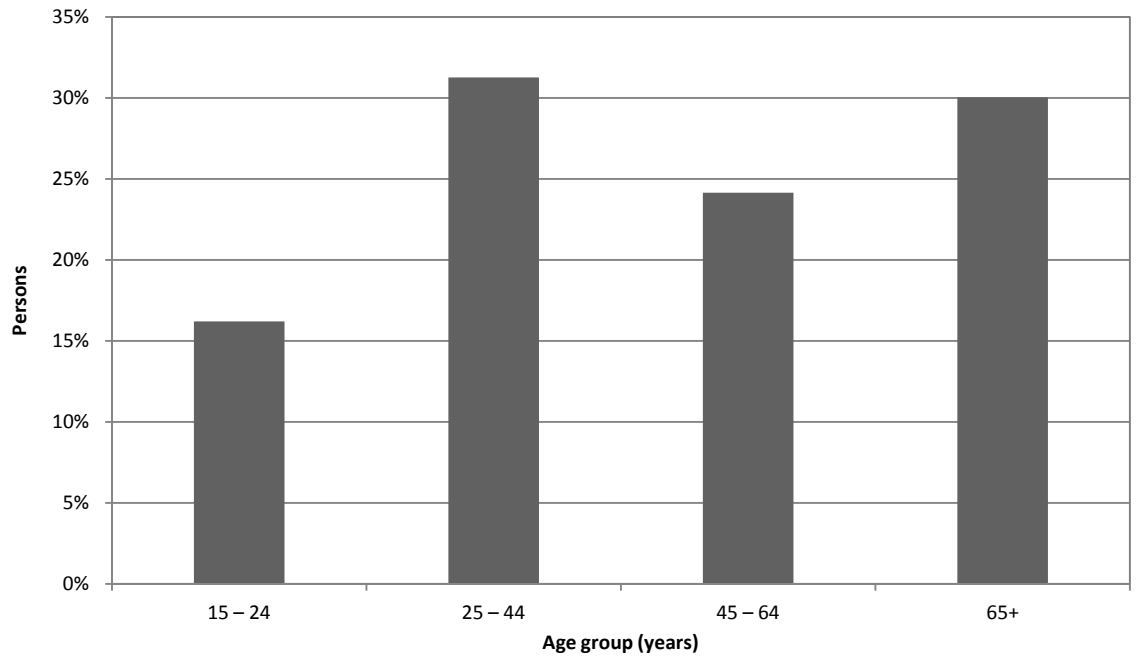

Figure 3.13: Percentage of persons with untreated decay by age, persons aged 15 years and older

Persons (%)	15–24 years	25–44 years	45–64 years	65+ years	Total
With untreated decay	16.2	31.3	24.2	30.0	26.1

Source: The National Survey of Adult Oral Health, 2004–06

- The highest percentage (31.3%) of people with untreated decay was found among 25–44-year-olds. Almost as many persons aged 65 and older had untreated decay (30%).

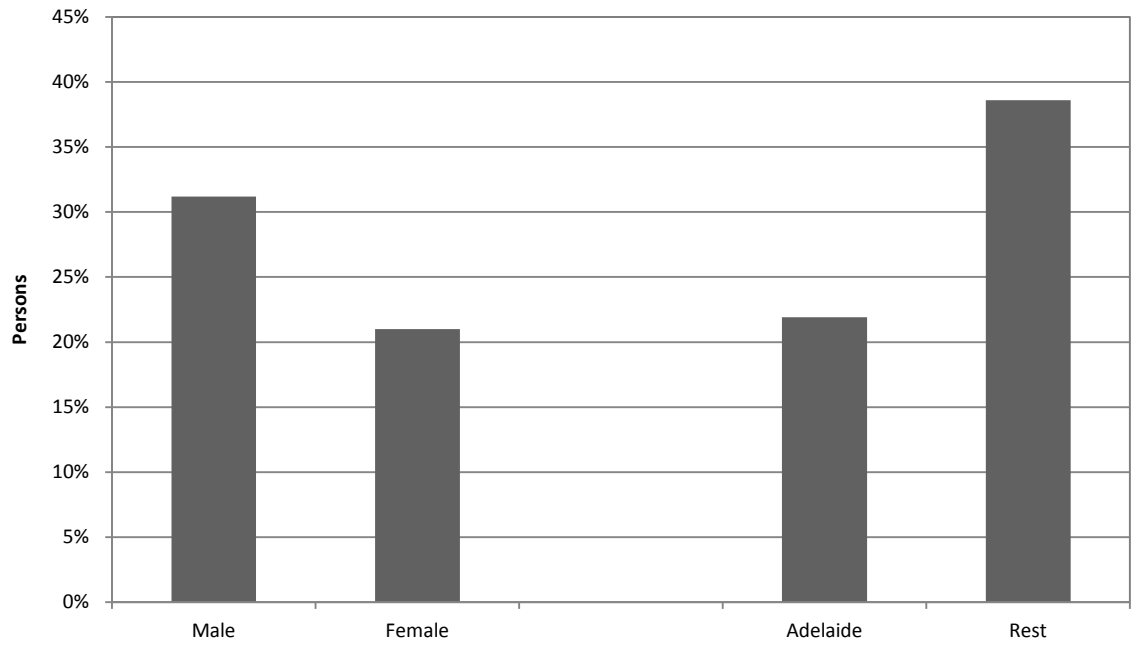

Figure 3.14: Percentage of persons with untreated decay by sex and geographic region (Adelaide/ rest-of-state), persons aged 15 years and older

	Sex		Region	
Mean DMFT	**Male**	**Female**	**Adelaide**	**Rest-of-state**
With untreated decay	31.2	21.0	21.9	38.6

Source: The National Survey of Adult Oral Health, 2004–06

- Among males, 31.2% had untreated decay compared with 21.0% of females.
- Those living outside Adelaide had a higher prevalence of untreated decay (38.6%) in comparison with those living in Adelaide (21.9%).

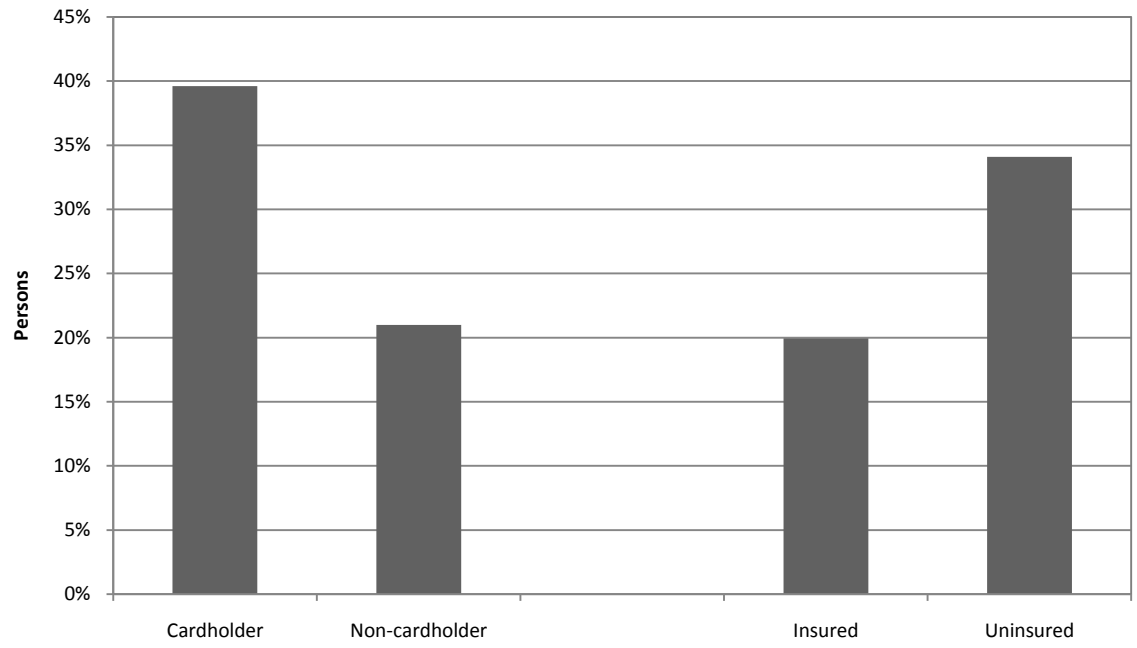

Figure 3.15 Percentage of persons with untreated decay by cardholder status and dental insurance status, persons aged 15 years and older

	Cardholder status		Dental insurance status	
Mean DMFT	**Cardholder**	**Non-cardholder**	**Insured**	**Uninsured**
With untreated decay	39.6	21.0	20.0	34.1

Source: The National Survey of Adult Oral Health, 2004–06

- The percentage of cardholders with untreated decay (39.6%) was almost double that of non-cardholders (21.0%).
- Uninsured people had a higher percentage with untreated decay (34.1%) compared with those with dental insurance (20.0%).

Caries experience of adults attending public dental care

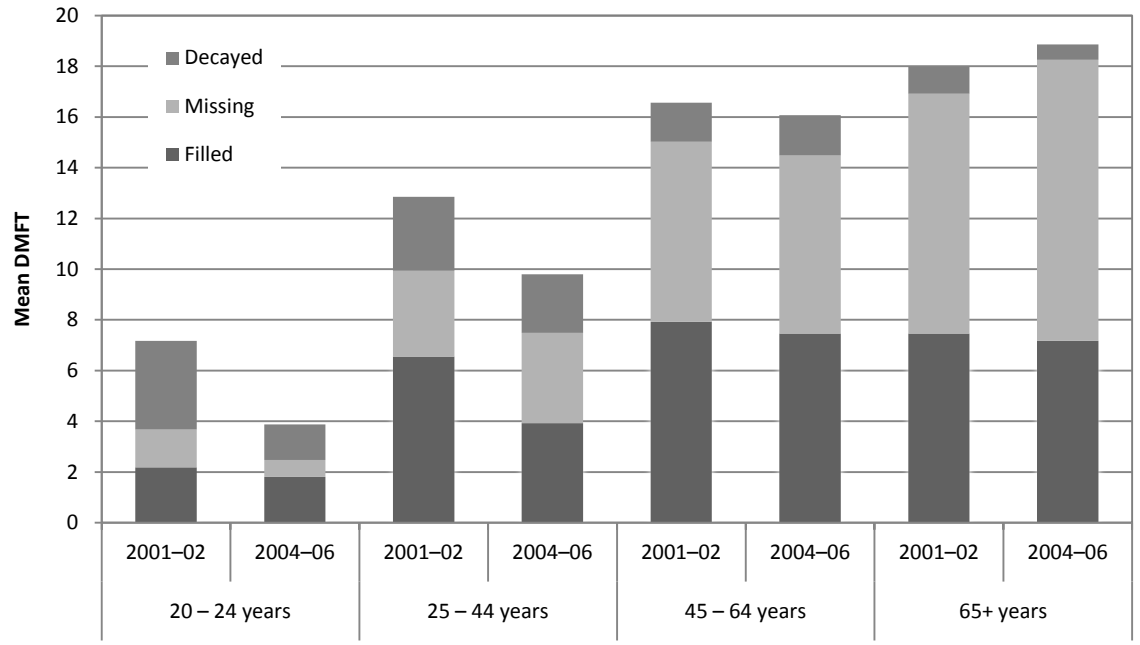

Figure 3.16: Mean DMFT by age for years 2001–02 and 2004–06, persons aged 20 years and older attending public dental care

	20–24 years		25–44 years		45–64 years		65+ years		Total	
Mean DMFT	**2001–02**	**2004–06**	**2001–02**	**2004–06**	**2001–02**	**2004–06**	**2001–02**	**2004–06**	**2001–02**	**2004–06**
Decayed	3.49	1.40	2.91	2.32	1.54	1.59	1.08	0.61	1.84	1.45
Missing	1.49	0.67	3.39	3.55	7.09	7.02	9.45	11.08	6.68	7.09
Filled	2.19	1.81	6.55	3.93	7.93	7.46	7.46	7.17	7.16	6.01
Total	**7.17**	**3.88**	**12.85**	**9.80**	**16.57**	**16.07**	**18.00**	**18.87**	**15.68**	**14.55**

Sources: Adult Dental Programs Surveys, 2001–02 and 2006

- Total DMFT decreased for all age groups from 2001–02 to 2004–06. Overall, total DMFT decreased by 8%.
- The total number of teeth missing due to decay increased from 2001–02 to 2204–06 by 6%. This increase was mainly driven by an increase of 17% for teeth missing due to decay for the 65 years and older age group.
- The largest change between 2001–02 and 2004–06 was seen for filled teeth in the 25–44 years age group, with a decrease of 2.62 (40%). This was followed by a decrease of 2.1 (60%) in teeth with untreated decay in 20–24-year-olds.

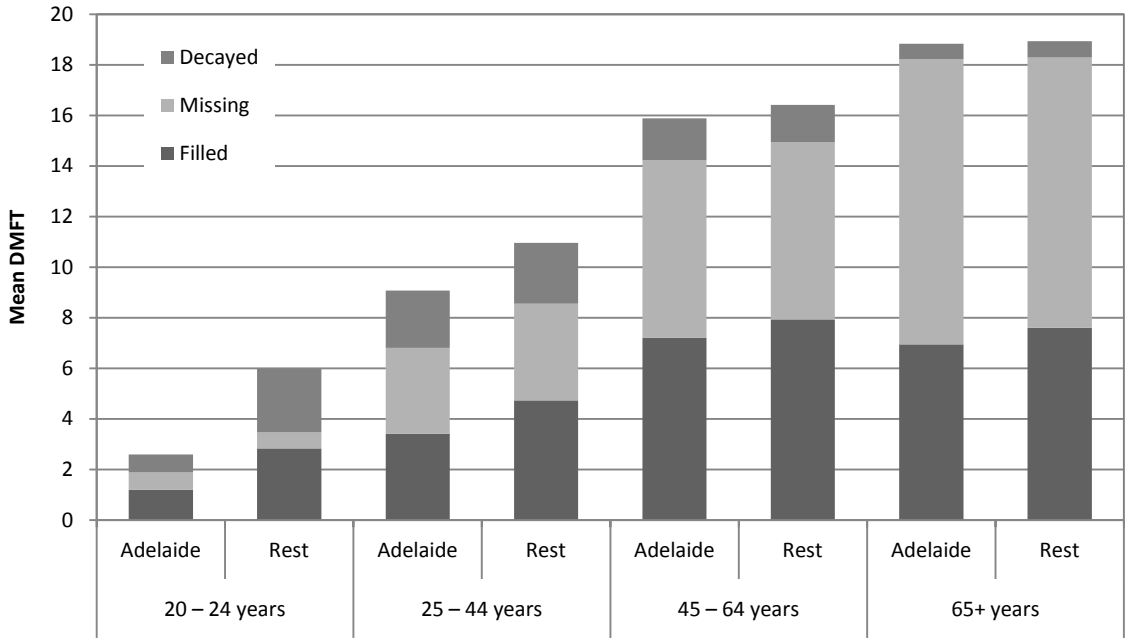

Figure 3.17: Mean DMFT by age and geographic region (Adelaide/rest-of-state) for years 2004–06, persons aged 20 years and older attending public dental care

	20–24 years		25–44 years		45–64 years		65+ years	
Mean DMFT	**Adelaide**	**Rest**	**Adelaide**	**Rest**	**Adelaide**	**Rest**	**Adelaide**	**Rest**
Decayed	0.71	2.52	2.27	2.40	1.65	1.47	0.60	0.65
Missing	0.69	0.64	3.39	3.82	7.02	7.01	11.28	10.68
Filled	1.20	2.83	3.42	4.74	7.21	7.94	6.95	7.61
Total	**2.60**	**5.99**	**9.07**	**10.96**	**15.88**	**16.42**	**18.83**	**18.94**

Source: Adult Dental Programs Survey, 2006

- Overall, total DMFT was higher in all age groups for residents of the rest-of-state compared with those living in Adelaide.
- The biggest differences were seen in the 20–24 years age group. Total DMFT for this group in the rest-of-state was almost double that of Adelaide. The number of teeth with untreated decay for those in the rest-of-state was more than 3.5 times that of Adelaide, while the number of filled teeth was almost 2.5 times that of Adelaide.
- In the 25–44 years age group, those who lived in the rest-of-state had 1.32 more filled teeth than those living in Adelaide, which was a difference of 39%.
- In the older age groups, there was little difference between residents of Adelaide and the rest-of-state.

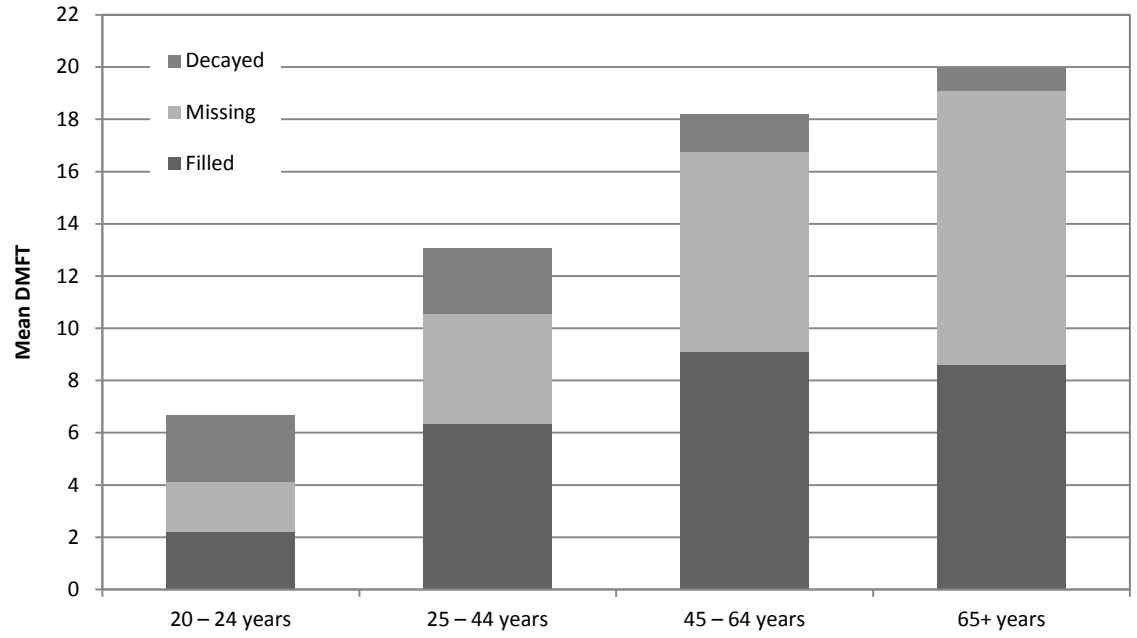

Figure 3.18: Mean DMFT by age for years 2004–06, persons aged 20 years and older attending public dental care for general dental care

Mean DMFT	20 - 24 yrs	25 - 44 yrs	45 - 64 yrs	65+ yrs	Total
Decayed	2.53	2.52	1.42	0.88	26.26
Missing	1.91	4.23	7.66	10.47	24.27
Filled	2.21	6.34	9.09	8.62	7.35
Total	**6.65**	**13.09**	**18.17**	**19.97**	**57.88**

Note: Category of care was classified as 'general' if the course of care was initiated for reasons other than relief of pain.

Source: Adult Dental Programs Survey, 2006

- Mean DMFT increased across age groups, from 6.65 in 20–24-year-olds to 19.97 in those aged 65 years and older.
- Untreated decay accounted for 38% of caries experience in 24–24-year-olds. This age group had the highest average number of teeth with untreated decay (2.53) along with those aged 25 – 44 years (2.52). Untreated decay decreased consistently across age groups.
- Among those aged 25 – 44 and 45 – 64 years, filled teeth accounted for about half of mean DMFT (48% and 50%).
- Persons aged 65+ years had the highest DMFT. Over half of the DMFT in this aged group was for missing teeth (52%). The average number of missing teeth increased steadily across age groups.

Summary

Children

- Among children attending the School Dental Service, 8 -year-olds had the highest dmft at 2.4 teeth. The number of deciduous teeth with untreated decay was greatest for ages 4 and 5 years; however, this number decreased across older age groups while the number of filled teeth increased across older age groups, peaking at 1.36 teeth in children aged 8 years.
- Children aged 3 and 4 years had the highest number of deciduous teeth present (19.8); however, the percentage of children with decay experience increased from 25.0% at age 3 years to 62.1% at age 9 years. This is indicative of a higher percentage of deciduous teeth being affected with decay across older age groups.
- Mean DMFT increased across older age groups, from 0.05 in 6-year-olds to 2.35 in 17-year-olds. Despite the fact that the first eruption of permanent teeth generally occurs at 6 years of age, 3.8% of 6-year-olds had caries experience. The percentage of children who had caries experience increased across older age groups to over 60% by age 15 years, and to a high of 65.0% by age 17 years.
- While dmft among children aged 3 years reached an average of more than one tooth, it took until 12 years of age, approximately 6 years from the first permanent tooth eruption, for DMFT to reach a mean value of one tooth. This could reflect varying susceptibility of deciduous and permanent teeth to caries; risk factors across the early lifespan; or better oral health activities, home care or dental care among older children.
- The percentage of children with caries experience of either deciduous or permanent dentition peaked at age 9 years (67.1), after which the average decreased, due to exfoliation of the deciduous teeth. Beyond age 13 years, dmft + DMFT increased consistently to reach 65.2% by age 17 years.
- Since the late 1990s, mean dmft has increased among 6–7 and 8–9-year-olds, after fluctuating between 1992 and 1998. The increase was greater among 6–7-year-olds, who reached a similar dmft score as 8–9-year-olds in 2000. Until 2008, mean dmft among 6–7-year-olds had continued to mirror the average for 8–9-year-olds. For both age groups, mean dmft was higher in 2008 than it was in 1992.
- The percentages of children with dmft aged 6–7 and 8–9 years decreased between 1992 and 1999, and have increased since 1999. While the increase has slowed in recent years, in 2008, the percentage of children aged 6–9 years with caries experience in their deciduous teeth was approximately 10% higher than the percentage recorded in 1992.
- Mean DMFT decreased from 1992 until the mid 1990s among children aged 8–15 years. The point in time at which the decrease stopped varied among age groups, but mean DMFT in all age groups increased following this decline. Since 2004, DMFT among 8–9-year-olds had begun to decline, while, in 10–11-year-olds, mean DMFT had fluctuated but remained relatively consistent. The increase slowed among 12–13-year-olds from 2005 but continued for 14–15-year-olds. Compared with the mean DMFT in 1992, the average in 2008 for all ages except 14–15-year-olds was slightly higher.
- The percentage of 8–15-year-old children with caries experience in their permanent teeth declined from 1992 until the mid 1990s. Children aged 8–9 and 10–11 years showed an increase in the percentage with caries experience from 2000 until 2004, after which the

percentage began to decline, particularly among 8–9-year-olds. The prevalence in 12–13 and 14–15-year-olds continued to increase until 2008 but slowed in the later years.

- From analysis of the changes in dmft and DMFT among children over the 16 years from 1992 to 2008, it appears that oral health improved between 1992 and the mid 1990s but then declined. There was evidence that oral health among older children with permanent teeth may have been starting to improve once again but, among younger children with deciduous teeth, there have been no such signs of improvement in recent years.

Adults aged 15 years and older

- Mean DMFT continued to increase across older age groups in adulthood. Among adults aged 15 and older, DMFT increased from 1.75 for 15–24-year-olds to 12.71 for the 65 years and older age group. The average number of missing teeth also increased across older age groups, to 4.08 among those aged 65 years and older, but the mean number of filled teeth and teeth with untreated decay did not show the same pattern. Filled teeth peaked at 12.57 for 45–64-year-olds. The percentage of people with untreated decay tended to increase across older age groups; however, 25–44-year-olds had the highest prevalence (31.3%), higher than those aged 65 years and older (30.0%). The average number of decayed teeth was highest among 25–44-year-olds, and this same age group had the highest prevalence of untreated decay, indicating that 25–44 year-olds had either a higher rate of recurrent caries or less success in obtaining treatment to manage the disease.
- Females had an overall higher mean DMFT than males. The higher average was due to the number of filled teeth, while males had higher averages for both missing teeth and teeth with untreated decay. Females had 10% less untreated decay (21.0%) than males (31.2%). This may reflect a tendency among females to seek more treatment earlier than males.
- Adelaide residents had a lower mean of all three caries measures than non-Adelaide residents and, consequently, a lower mean DMFT. Non-Adelaide residents had close to twice as high a prevalence of untreated decay (38.6%) than Adelaide residents (21.9%). This may have partially reflected greater difficulty with accessing dental services.
- Cardholders had higher averages of each of the three caries measures than non-cardholders, particularly missing teeth. For cardholders, the average number of missing teeth was 7.53, compared with 2.76 for non-cardholders. Untreated decay was almost twice as prevalent among cardholders (39.6%) than non-cardholders (21.0%). A higher number of filled teeth among cardholders (8.26) compared with non-cardholders (7.88) and the higher number of missing teeth suggested that cardholders received treatment for tooth decay but opted for an extraction as treatment more frequently than did non-cardholders. The higher prevalence of untreated decay was also indicative of a greater percentage of cardholders with need for caries treatment.
- People with dental insurance had a higher average number of filled teeth than uninsured people, but fewer missing teeth and teeth with untreated decay. The prevalence of untreated decay among people with dental insurance (20.0%) was lower than that among uninsured people (34.1%). As with males and females, this may reflect a tendency among insured persons to seek treatment earlier or more frequently than uninsured persons, which may in turn be a reflection of access difficulties among uninsured persons.

Adults attending public dental care

- The mean DMFT among adults aged 20–45 years attending public dental care decreased from 2001–02 to 2004–06. Among 20–24-year-olds, the decrease was mainly due to a drop in the number of teeth with untreated decay, from 3.49 in 2001–02 to 1.40 in 2004–06. There was also a decrease in the number of teeth missing due to decay, which could be indicative of earlier preventive interventions or improved oral health activities in this age group. Among 25–44-year-olds, the main decrease was seen in the number of filled teeth; however, each measure showed a decline. Averages across the two periods were comparable among 45–64 year olds and those aged 65 years and older; however, the latter group had an increase of over 1.5 teeth in the number of missing teeth. There may have been an indication in the younger age groups of an improvement in the oral health of adults attending public dental care, but there was no such indication in those aged 45 years or older.
- Non-Adelaide residents had a higher mean DMFT than Adelaide residents among those younger than 45 years. From age 45 years onwards, overall mean DMFT was similar between the geographic regions. Among 20–24-year-olds living outside Adelaide, teeth with untreated decay and filled teeth were more than twice the respective averages for Adelaide resident 20–24-year-olds. The biggest difference among 25–44 year-olds was in the number of filled teeth.
- The mean DMFT among adults attending public dental care increased across age groups, from 6.65 among 20–24-year-olds to 19.97 among those aged 65 years and older. This was mainly due to the consistent increase in missing teeth across age groups, which accounted for 29% of the DMFT for 20 – 24-year-olds and 52% for 65+ year-olds. In contrast, the average number of teeth with untreated decay decreased across age groups, from 2.53 to 0.88. The average number of filled teeth was highest among 45 – 64-year-olds.

4 Periodontal disease

Calculus and gingival bleeding in children

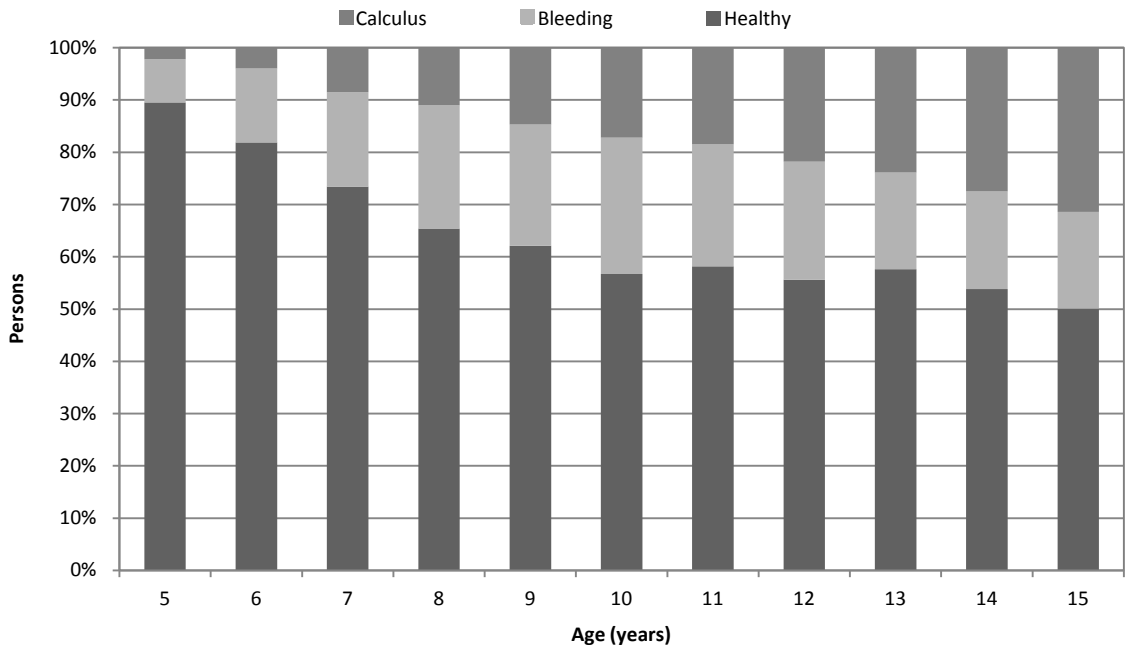

Figure 4.1: Percentage of children with calculus and gingival bleeding by age, children attending School Dental Service

Persons (%)	5 years	6 years	7 years	8 years	9 years	10 years	11 years	12 years	13 years	14 years	15 years
Healthy	89.5	81.9	73.4	65.4	62.1	56.7	58.2	55.6	57.6	53.6	50.1
Bleeding	8.3	14.1	18.1	23.6	23.2	26.1	23.3	22.6	18.5	18.6	18.5
Calculus	2.2	4.0	8.5	11.0	14.7	17.2	18.5	21.8	23.9	27.4	31.4

Source: Child Dental Health Survey, 2008

- The percentage of children who had gingival bleeding or calculus present on their teeth increased across older age groups.
- At age 9 years, 23.2% of children examined by the School Dental Service had gingival bleeding and 14.7% had calculus present on their teeth.
- At age 15 years, 18.5% had gingival bleeding and 31.4% had calculus present on their teeth.

Periodontal disease in adults aged 15 years and older

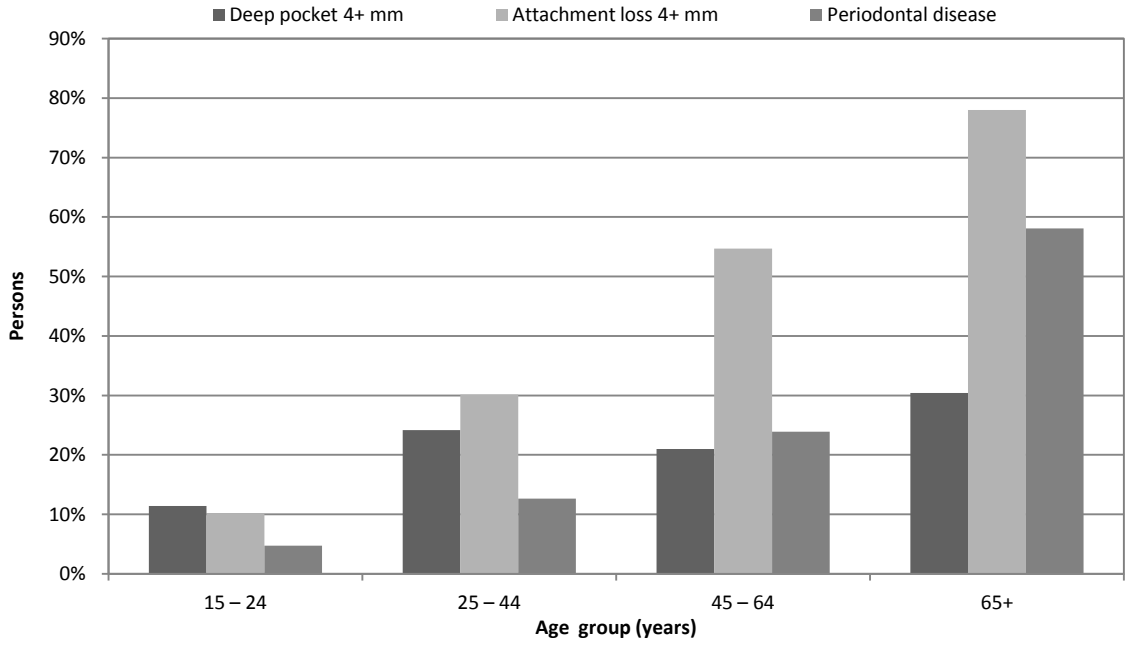

Figure 4.2: Prevalence of deep periodontal pocket, clinical attachment loss and periodontal disease by age, residents aged 15 years and older

Persons (%)	15–24 years	25–44 years	45–64 years	65+ years	Total
Deep pocket 4+ mm	11.4	24.2	21.0	30.4	21.5
Attachment loss 4+ mm	10.2	30.1	54.7	78.0	39.3
Periodontal disease	4.8	12.7	23.9	58.1	19.8

Note: CDC definition of periodontal disease is ≥2 interproximal (not on same tooth) sites with CAL ≥4mm or ≥2 interproximal sites with PD ≥5mm

Source: The National Survey of Adult Oral Health, 2004–06

- The percentage of people with attachment loss of 4+ mm increased steadily across age groups.
- The prevalence of periodontal disease increased across older age groups to 58.1% among those aged 65 years and older. This was 34.2 percentage points higher than the preceding age group.
- There was a less pronounced increase in deep pockets of 4+mm across older age groups, with the percentage increasing from 11.4% among 15–24-year-olds to 30.4% among those aged 65 years and older. Little difference was seen between 25–44 and 45–64 years age groups.

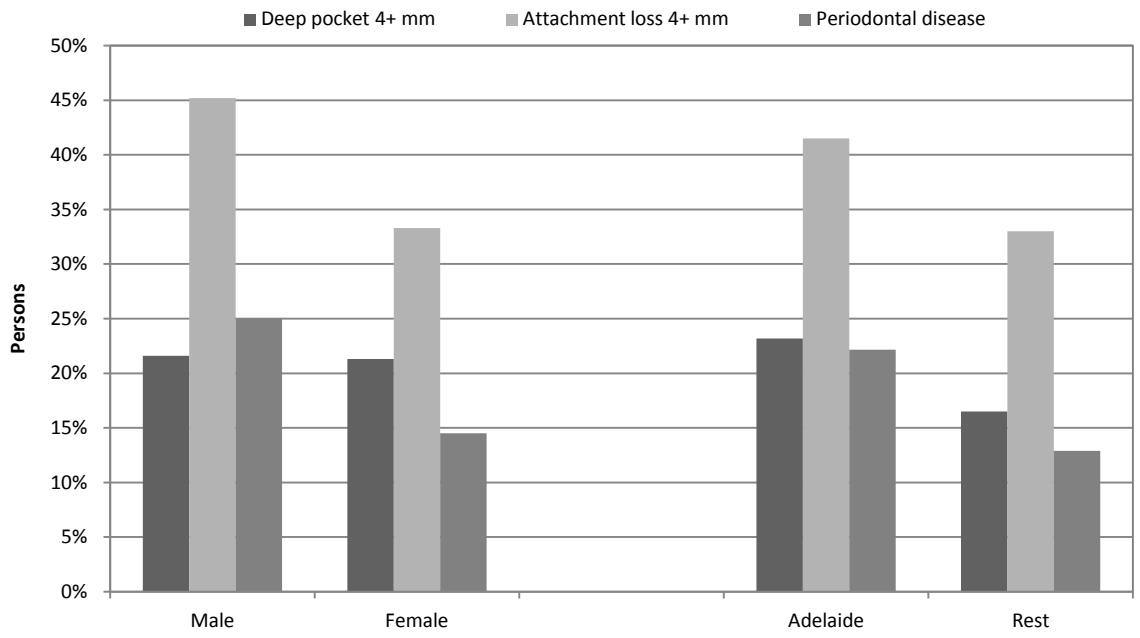

Figure 4.3: Prevalence of deep periodontal pocket, clinical attachment loss and periodontal disease by sex and region (Adelaide/rest-of-state), residents aged 15 years and older

	Sex		Region	
Persons (%)	**Male**	**Female**	**Adelaide**	**Rest-of-state**
Deep pocket 4+ mm	21.6	21.3	23.2	16.5
Attachment loss 4+ mm	45.2	33.3	41.5	33.0
Periodontal disease	25.0	14.5	22.2	12.9

Source: The National Survey of Adult Oral Health, 2004–06

- Males and females had equal prevalence of deep periodontal pockets of 4+ mm, with 21.6% of males and 21.3% of females exhibiting deep periodontal pockets.
- A higher percentage of males than females had both clinical attachment loss of 4+ mm (45.2% compared with 33.3% for females) and periodontal disease (25.0% compared with 14.5% for females).
- Those adults living within Adelaide had a higher prevalence of deep periodontal pockets of 4+ mm, clinical attachment loss of 4+ mm and periodontal disease than those residing outside Adelaide.

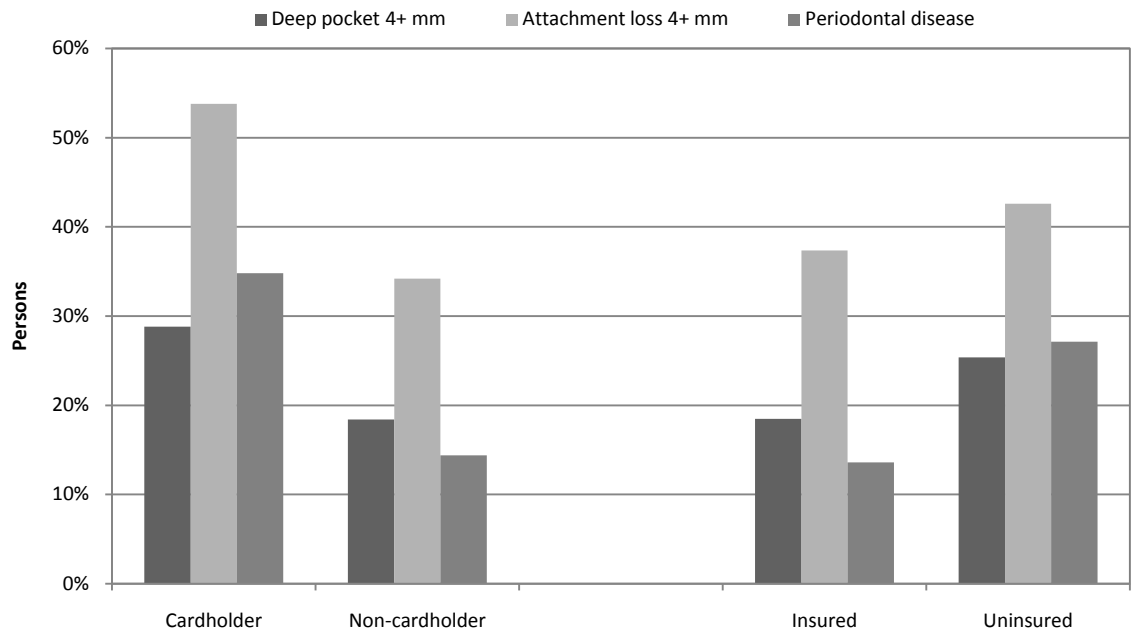

Figure 4.4: Prevalence of deep periodontal pocket, clinical attachment loss and periodontal disease by cardholder status and dental insurance status, residents aged 15 years and older

	Cardholder status		Dental insurance status	
Persons (%)	**Cardholder**	**Non-cardholder**	**Insured**	**Uninsured**
Deep pocket 4+ mm	28.8	18.4	18.5	25.4
Attachment loss 4+ mm	53.8	34.2	37.4	42.6
Periodontal disease	34.8	14.4	13.6	27.1

Source: The National Survey of Adult Oral Health, 2004–06

- Cardholders had a prevalence almost two and a half times higher (34.8%) of experiencing periodontal disease than non-cardholders (14.4%). Over half of cardholders (53.8%) had clinical attachment loss of 4+ mm, and more than one-quarter (28.8%) had deep periodontal pockets of 4+ mm.
- The prevalence of periodontal disease among people without dental insurance was twice that of those that were insured. Both deep periodontal pockets of 4+ mm and clinical attachment loss of 4+ mm were also higher among uninsured people.

Periodontal disease in adults attending public dental care

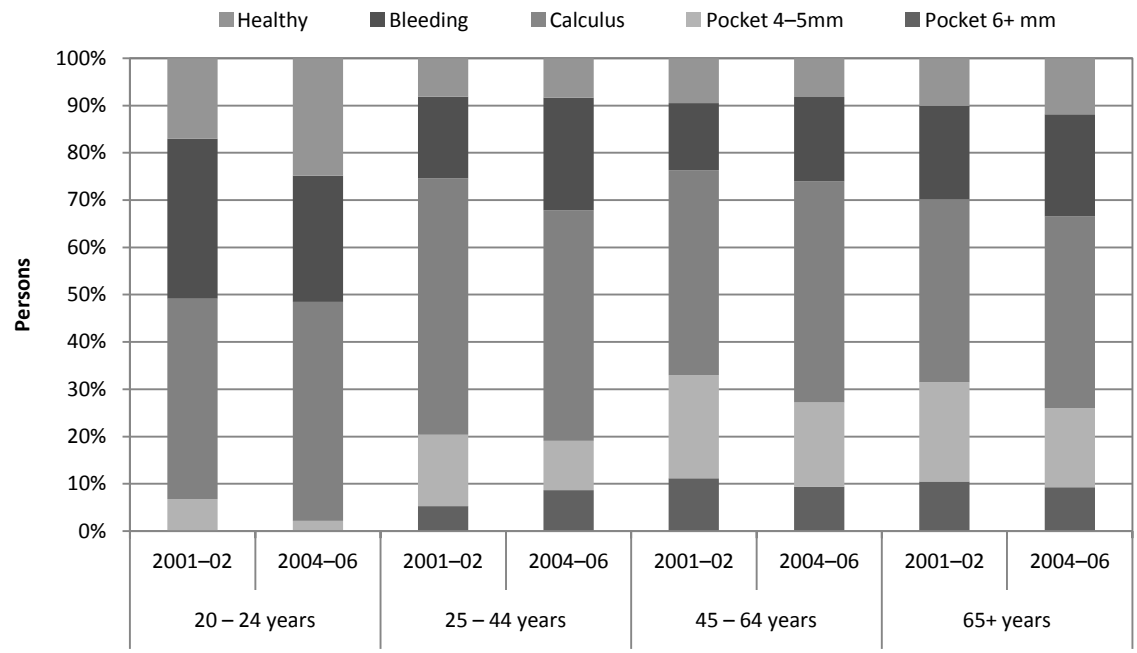

Figure 4.5: **Maximum Community Periodontal Index (CPI) by age for years 2001–02 and 2004–06, persons aged 20 years and older attending public dental care**

	20–24 years		25–44 years		45–64 years		65+ years		Total	
Max. CPI (%)	2001–02	2004–06	2001–02	2004–06	2001–02	2004–06	2001–02	2004–06	2001–02	2004–06
Healthy	17.0	24.9	8.1	8.3	9.5	8.2	10.1	11.9	9.6	10.4
Bleeding	33.9	26.7	17.3	23.9	14.2	17.9	19.7	21.5	17.7	21.5
Calculus	42.4	46.3	54.3	48.7	43.4	46.7	38.7	40.6	44.9	45.2
Pocket 4–5 mm	6.8	2.0	15.1	10.5	21.8	17.8	21.0	16.7	19.0	14.3
Pocket 6+ mm	0.0	0.2	5.3	8.7	11.2	9.4	10.5	9.3	8.8	8.6

Sources: Adult Dental Programs Surveys, 2001–02 and 2006

- The percentage of people aged 20–24 years with healthy gums increased by 46% between 2001–02 and 2004–06. This was the largest improvement evident.
- Pockets of 4–5 mm decreased across all age groups.

Summary

Children

- The percentage of children with healthy gums declined from 89.5% at age 5 years to 50.1% at age 15 years. Children aged 10 years had the highest prevalence of periodontal bleeding (25.1%). The prevalence of calculus increased consistently across older age groups to 31.4% by age 15 years.

Adults aged 15 years and older

- Among adults aged 15 years and older, the prevalence of attachment loss of 4+ mm and periodontal disease increased consistently across older age groups. Deep periodontal pockets of 4+ mm were most prevalent among those aged 65 years and older (30.4%); however, 25–44-year-olds had the second highest prevalence at 24.2%. Both the child and adult data indicated that periodontal health declined across older age groups.
- Females had a similar prevalence of deep periodontal pockets of 4+ mm to males but a lower prevalence of attachment loss of 4+ mm and periodontal disease.
- Adelaide residents had a higher prevalence of all three measures of periodontal disease than non-Adelaide residents.
- A lower prevalence of each measure was seen among non-cardholders than cardholders. Among non-cardholders, deep periodontal pockets were more prevalent than cases of periodontal disease; however, the opposite was true for cardholders.
- People without dental insurance had a higher prevalence of periodontal pockets, attachment loss and periodontal disease than insured people. The prevalence of periodontal disease was higher among uninsured people and lower among insured people than was the prevalence of deep pockets of 4+ mm.
- The differences evident between these groups could be due to a number of factors, for example smoking, diet and oral health practices.

Adults attending public dental care

- Adults attending public dental care have shown an increase in the percentage of 20–24-year-olds with healthy gums between 2001–02 (17.0%) and 2004–06 (24.9%). There were smaller increases in other age groups and a decrease for ages 45–64 years. The only difference consistent across all age groups was for periodontal pockets of 4–5 mm, which decreased by an average of 25%. While data for 20–24-year-olds may have indicated an improvement in periodontal health in 2004–06 from 2001–02, no other age group showed either an improvement or a decline.

5 Tooth retention and loss

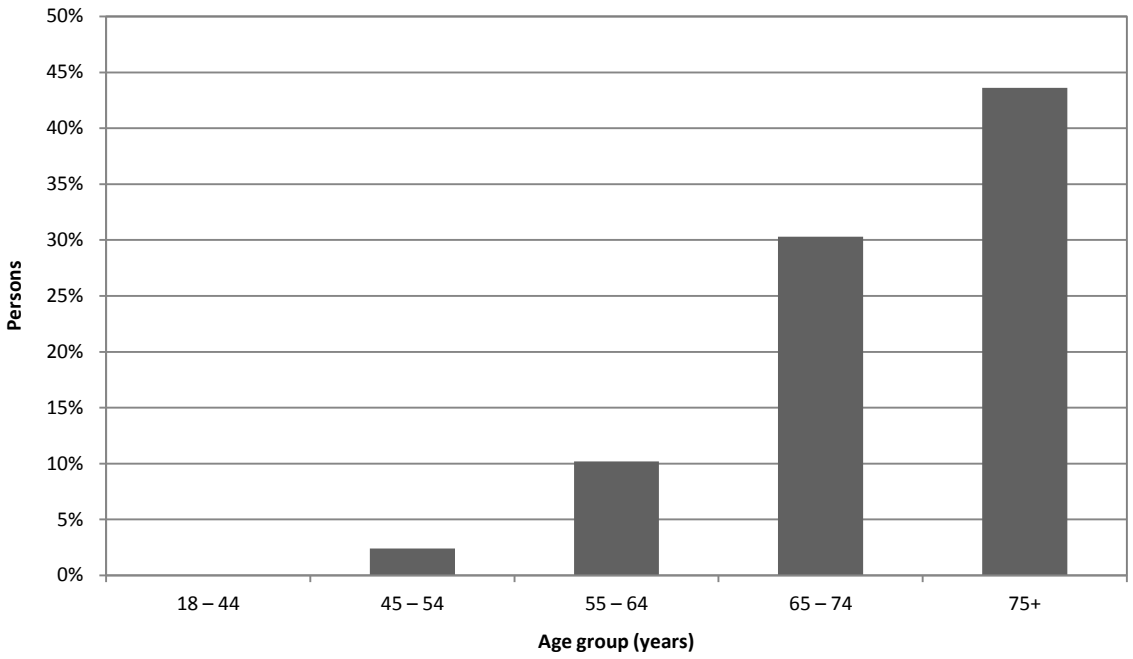

Figure 5.1: Percentage of persons who are edentulous by age, persons aged 18 years and older

	Age group (years)					
Persons (%)	**18–44**	**45–54**	**55–64**	**64–74**	**75+**	**Total**
Edentulous	0.0	2.4	10.2	30.3	43.6	9.3

Source: National Dental Telephone Interview Survey, 2008

- Among 55–64-year-olds, about 1 in 10 persons were edentulous. Almost one-third (30.3%) were edentulous among 64–75-year-olds, and the percentage rose to 43.6% among people aged 75 years and older.

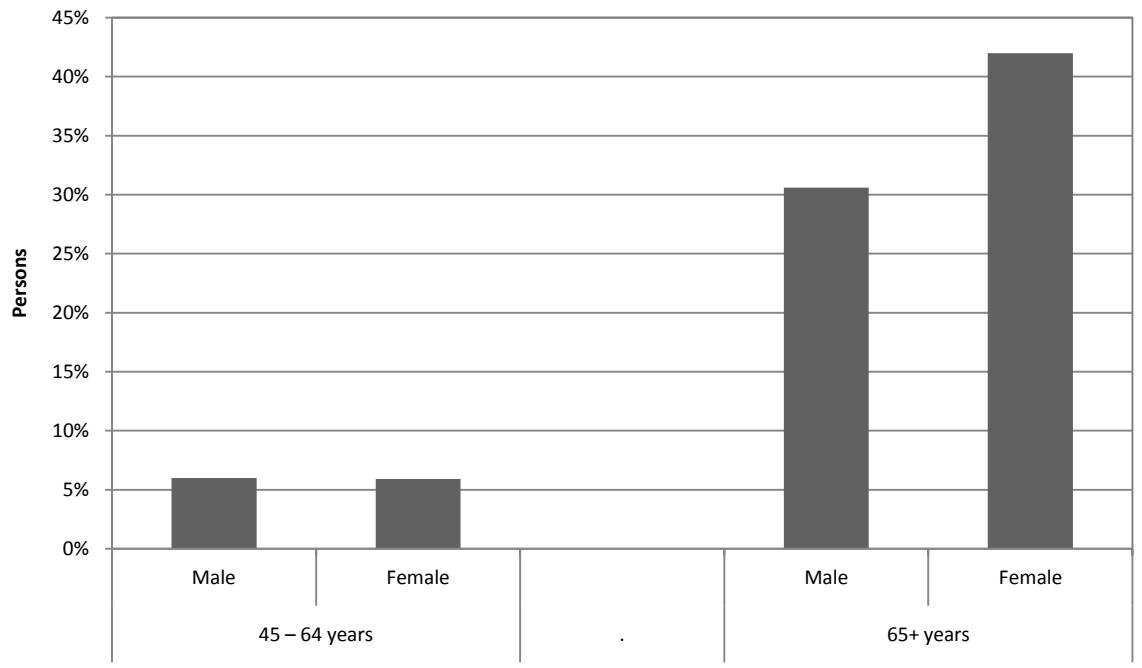

Figure 5.2: Percentage of persons who are edentulous by age and sex, persons aged 45 years and older

	45–64 years		65+ years	
Persons (%)	**Male**	**Female**	**Male**	**Female**
Edentulous	6.0	5.9	30.6	42.0

Source: National Dental Telephone Interview Survey, 2008

- In the 45–64 years age group, males and females had equal prevalence of edentulism.
- Among those aged 65 years and older, edentulism in females was higher (42.0%) than for males at (30.6%).

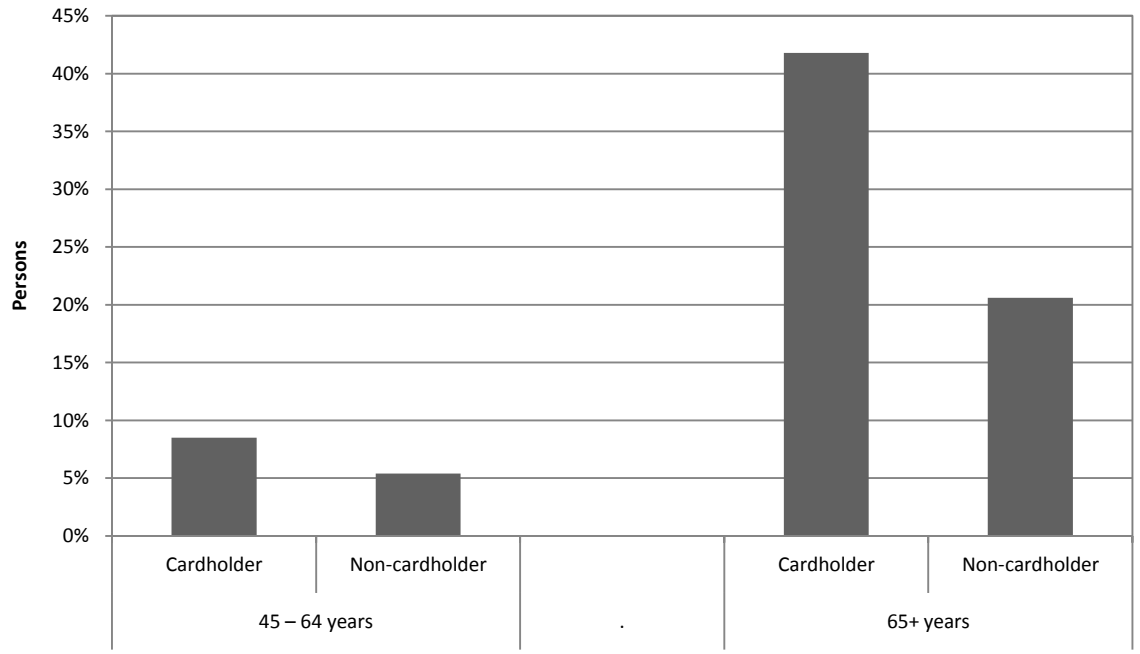

Figure 5.3: Percentage of persons who are edentulous by age and cardholder status, persons aged 45 years and older

	45–64 years		65+ years	
Persons (%)	**Cardholder**	**Non-cardholder**	**Cardholder**	**Non-cardholder**
Edentulous	8.5	5.4	41.8	20.6

Source: National Dental Telephone Interview Survey, 2008

- Cardholders aged 45–64 years had a higher prevalence (8.5%) of edentulism than non-cardholders (5.4%).
- For those aged 65 years and older, edentulism was over twice as prevalent among cardholders (41.8%) than non-cardholders (20.6%).

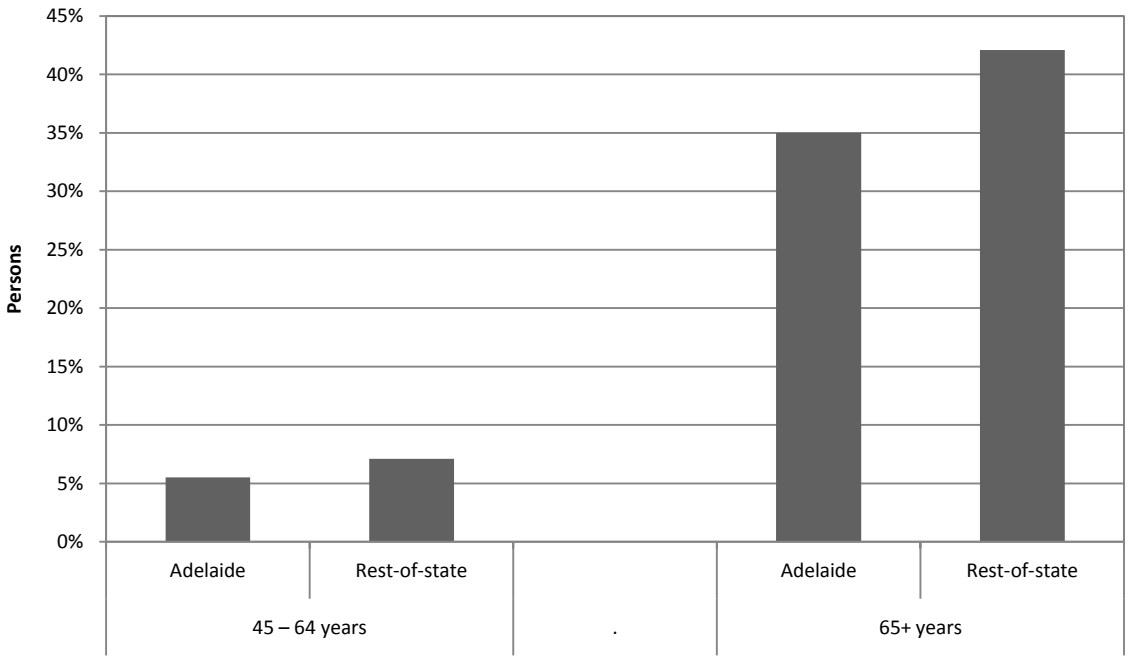

Figure 5.4: Percentage of persons who are edentulous by age and region (Adelaide/ rest-of-state), persons aged 45 years and older

	45–64 years		65+ years	
Persons (%)	**Adelaide**	**Rest-of-state**	**Adelaide**	**Rest-of-state**
Edentulous	5.5	7.1	35.0	42.1

Source: National Dental Telephone Interview Survey, 2008

- Persons living outside Adelaide had a higher prevalence of edentulism than those residing within Adelaide for both age groups.
- Among 45–64-year-olds, the difference in prevalence between Adelaide residents and those living in the rest-of-state was less than two percentage points (5.5% for Adelaide and 7.1% for rest-of-state). The difference in the older age group was 7.1 percentage points (35.0% for Adelaide and 42.1% for rest-of-state).

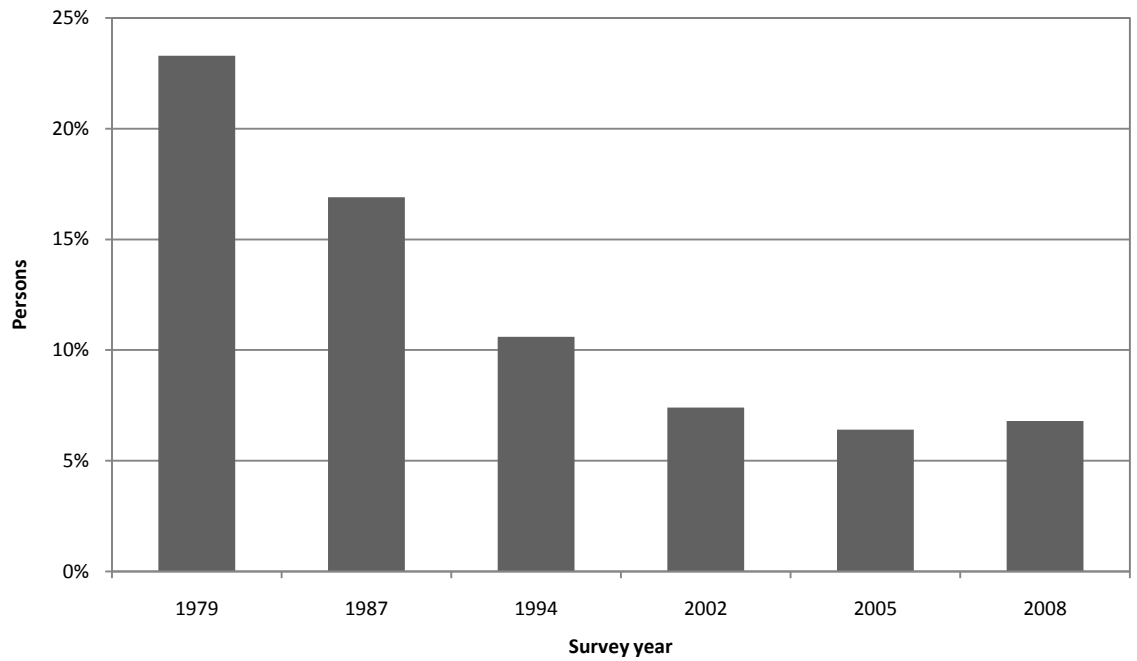

Figure 5.5: Percentage of persons who are edentulous for years 1979, 1987, 1994, 2002, 2005 and 2008, persons aged 18 years and older

Persons (%)	1979	1987	1994	2002	2005	2008
Edentulous	23.3	16.9	10.6	7.4	6.4	6.8

Sources: National Oral Health Survey, 1987–88; National Dental Telephone Interview Survey, 1994, 2002, 2005 and 2007–08

- To enable a valid comparison across survey years, data have been age standardised to reflect the 1979 population age distribution using the direct age standardisation method. All adults aged 18 years and older are included in this comparison.
- The prevalence of edentulism has declined from 23.3% in 1979 to 6.4% in 2005. However, a slight increase 6.8%was seen in 2008.

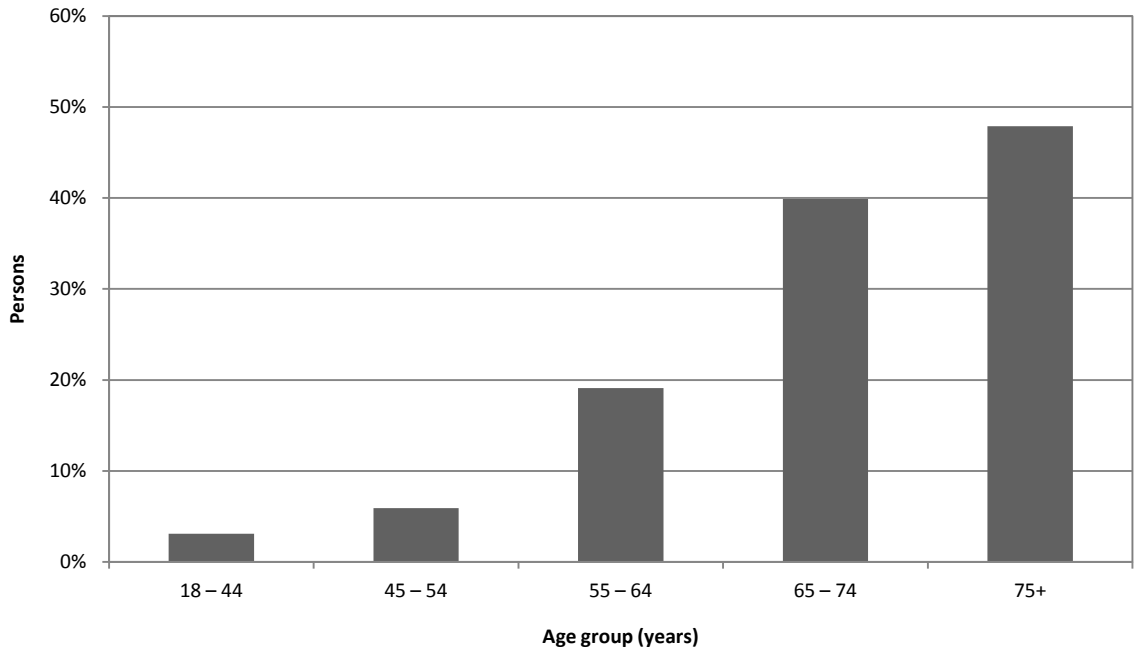

Figure 5.6: Percentage of persons wearing dentures by age, dentate persons aged 18 years and older

	Age group (years)					
Persons (%)	**18–44**	**45–54**	**55–64**	**64–74**	**75+**	**Total**
Wearing dentures	3.1	5.9	19.1	39.9	47.9	11.6

Source: National Dental Telephone Interview Survey, 2008

- The percentage of dentate people wearing dentures increased across older age groups.
- Dentate persons aged 55–64 years had more than three times as high a percentage (19.1%) as those aged 45–54 years (5.9%) wearing dentures. Dentate 65–74-year-olds had twice as high a prevalence as those aged 55–64 years (39.9%) of wearing dentures.
- The percentage of dentate people wearing dentures among those aged 75 years and older was 47.9%, eight percentage points higher than the preceding age group (39.9%).

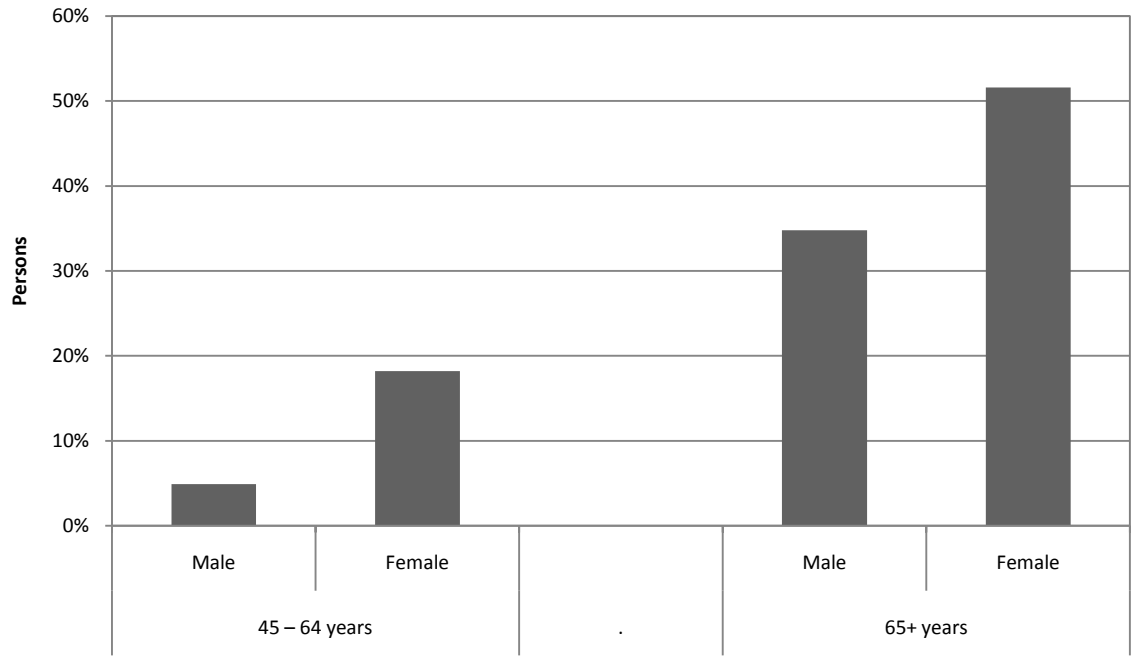

Figure 5.7: Percentage of persons wearing dentures by age and sex, dentate persons aged 45 years and older

	45–64 years		65+ years	
Persons (%)	**Male**	**Female**	**Male**	**Female**
Wearing dentures	4.9	18.2	34.8	51.6

Source: National Dental Telephone Interview Survey, 2008

- Dentate females had a higher prevalence of denture wearing than males in both age groups.
- Among dentate persons aged 45–64 years, the prevalence of females wearing dentures was almost four times as high (18.2%) as for males (4.9%). The prevalence of dentate females wearing dentures was only 1.5 times that for males among those aged 65 years and older.

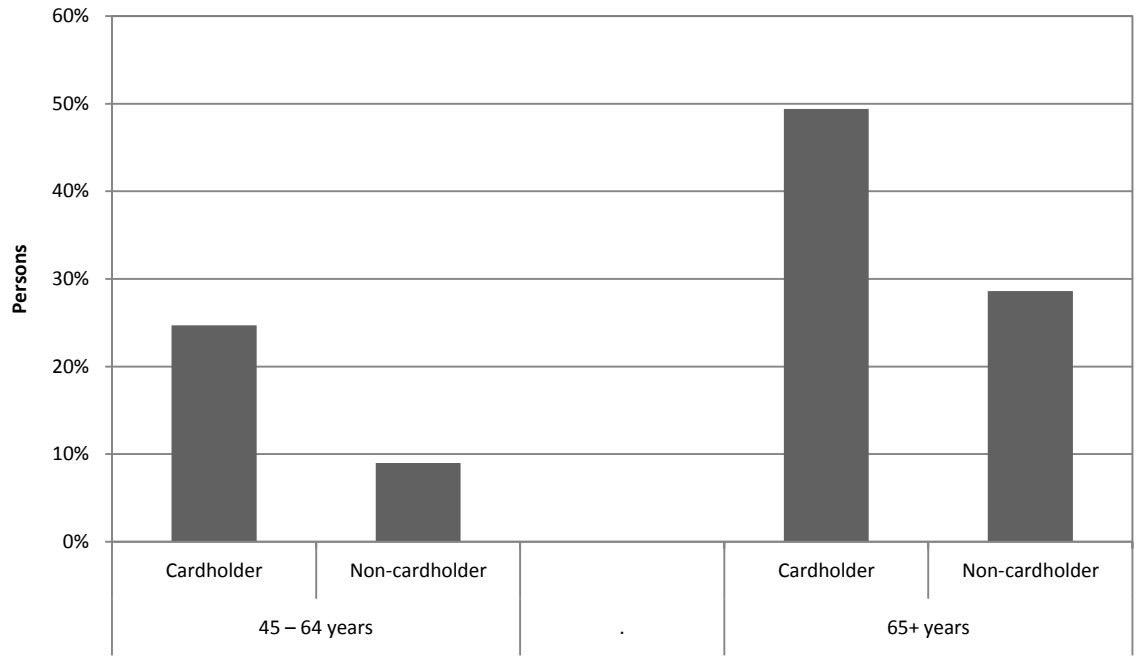

Figure 5.8: Percentage of persons wearing dentures by age and cardholder status, dentate persons aged 45 years and older

	45–64 years		65+ years	
Persons (%)	**Cardholder**	**Non-cardholder**	**Cardholder**	**Non-cardholder**
Wearing dentures	24.7	9.0	49.4	28.6

Source: National Dental Telephone Interview Survey, 2008

- Among 45–64-year-olds, dentate cardholders had a higher percentage wearing dentures (24.7%) than did non-cardholders (9.0%).
- A higher percentage of dentate cardholders aged 65 years and older wore dentures (49.4%), compared with dentate non-cardholders (28.6%).

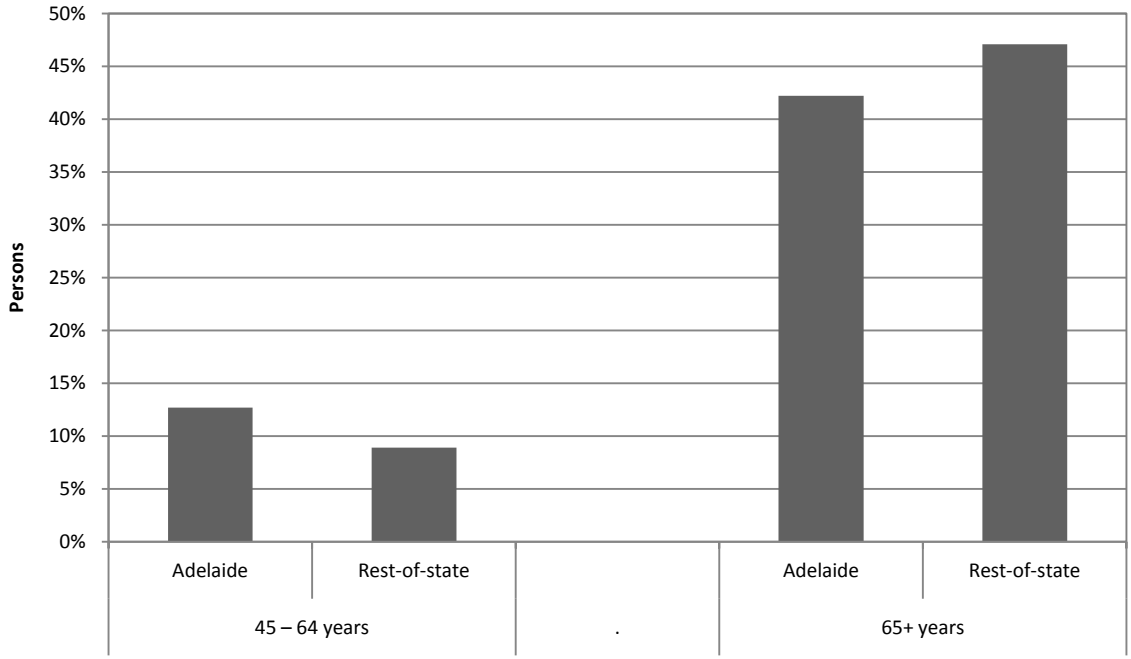

Figure 5.9: Percentage of persons wearing dentures by age and region (Adelaide/rest-of-state), dentate persons aged 45 years and older

	45–64 years		65+ years	
Persons (%)	**Adelaide**	**Rest-of-state**	**Adelaide**	**Rest-of-state**
Wearing dentures	12.7	8.9	42.2	47.1

Source: National Dental Telephone Interview Survey, 2008

- Dentate persons living in Adelaide had a higher prevalence of denture wearing (12.7%) than those living outside Adelaide (8.9%) among 45–64-year-olds.
- In the older age group of dentate persons, those residing in Adelaide had a lower percentage (42.2%) than those outside Adelaide (47.1%) wearing dentures.

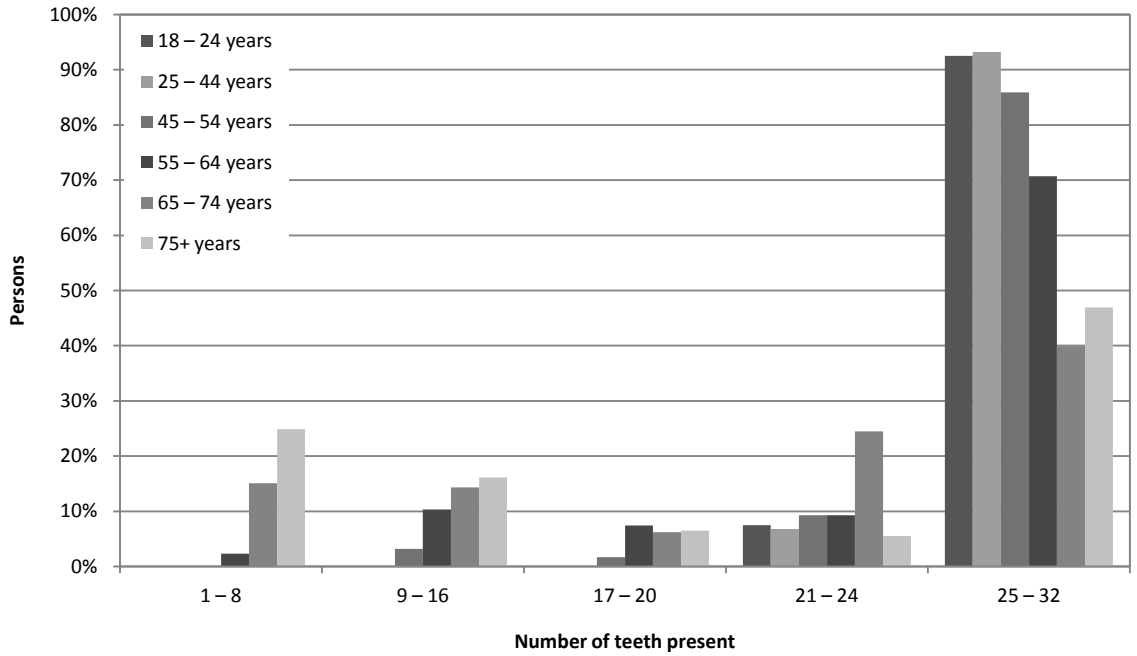

Figure 5.10: Frequency distribution of number of teeth present by age, dentate persons aged 18 years and older

	Number of teeth present					
Persons (%)	**1–8**	**9–16**	**17–20**	**21–24**	**25–32**	**Total**
18–24 years	—	—	—	7.5	92.5	100.0
25–44 years	—	—	—	6.8	93.2	100.0
45–54 years	—	3.2	1.7	9.3	85.9	100.0
55–64 years	2.3	10.3	7.4	9.3	70.7	100.0
65–74 years	15.1	14.3	6.2	24.5	39.9	100.0
75+ years	24.9	16.1	6.5	5.5	46.9	100.0
Total	**3.0**	**4.2**	**2.3**	**9.1**	**81.4**	**100.0**

Source: National Dental Telephone Interview Survey, 2008

- Almost one in four (24.9%) persons aged 75 years and older had only 1–8 teeth present. Of the younger age groups, 15.1% of 65–74-year-olds and 2.3% of 55–64-year-olds had 1–8 teeth remaining.
- The percentage of people with 25–32 teeth present tended to decrease across older age groups. In the two youngest age groups, about 93% had 25–32 teeth present; however, the percentage dropped to 85.9% for 45–54-year-olds, and 70.7% for 55–64-year-olds.
- The percentage of persons aged 75 years and older with 25–32 teeth present (46.9%) was higher than for 65–74-year-olds (39.9%); however, both were significantly lower than for 55–64-year-olds.

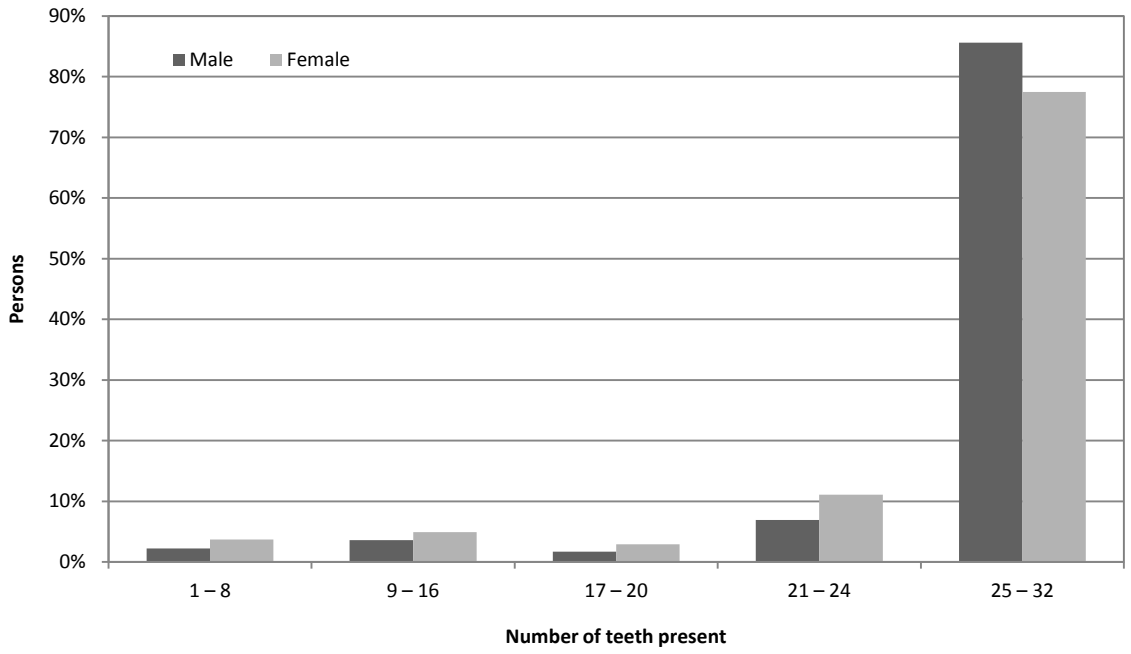

Figure 5.11: Frequency distribution of number of teeth present by sex, dentate persons aged 18 years and older

	Number of teeth present					
Persons (%)	**1–8**	**9–16**	**17–20**	**21–24**	**25–32**	**Total**
Male	2.2	3.6	1.7	6.9	85.6	100.0
Female	3.7	4.9	2.9	11.1	77.5	100.0
Total	**3.0**	**4.2**	**2.3**	**9.1**	**81.4**	**100.0**

Source: National Dental Telephone Interview Survey, 2008

- The percentage of males with 25–32 teeth present (85.6%) was significantly higher than for females (77.5%)
- Females had a higher prevalence of 20 teeth or less remaining (11.5%) than did males (7.5%).

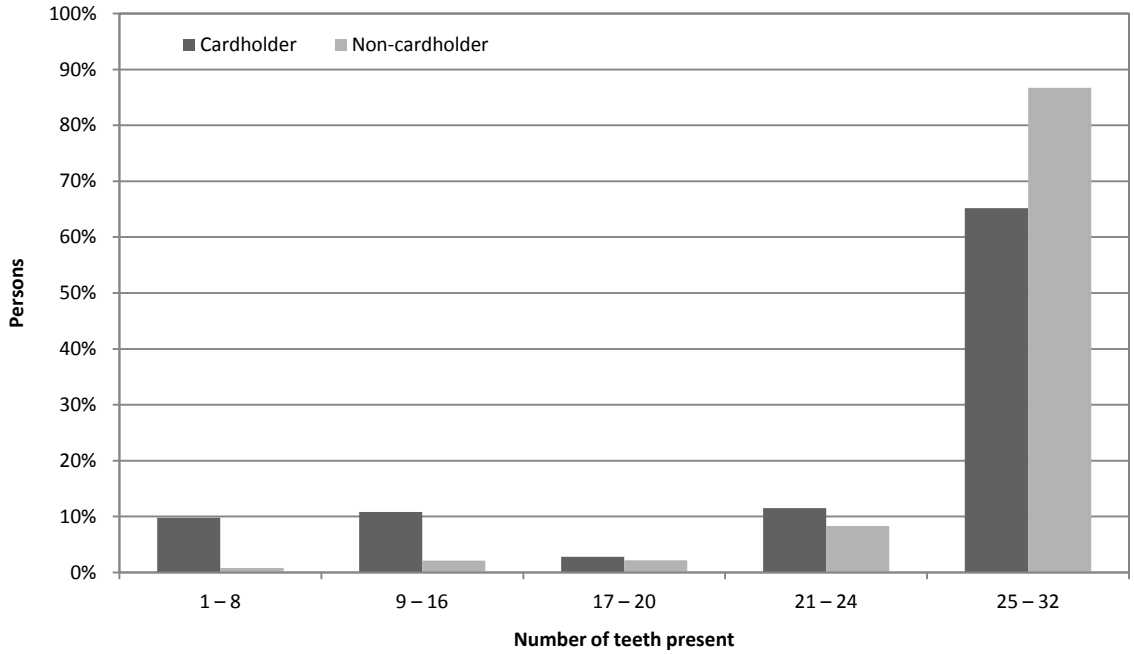

Figure 5.12: Frequency distribution of number of teeth present by cardholder status, dentate persons aged 18 years and older

	Number of teeth present					
Persons (%)	**1–8**	**9–16**	**17–20**	**21–24**	**25–32**	**Total**
Cardholder	9.8	10.8	2.8	11.5	65.2	100.0
Non-cardholder	0.8	2.1	2.2	8.3	86.7	100.0
Total	**3.0**	**4.2**	**2.3**	**9.1**	**81.4**	**100.0**

Source: National Dental Telephone Interview Survey, 2008

- Non-cardholders had a significantly higher percentage of people with 25–32 teeth present (86.7%) than did cardholders (65.2%).
- Less than 1% of non-cardholders had 1–8 teeth remaining, while a significantly higher percentage of cardholders, 9.8%, had 1–8 teeth.

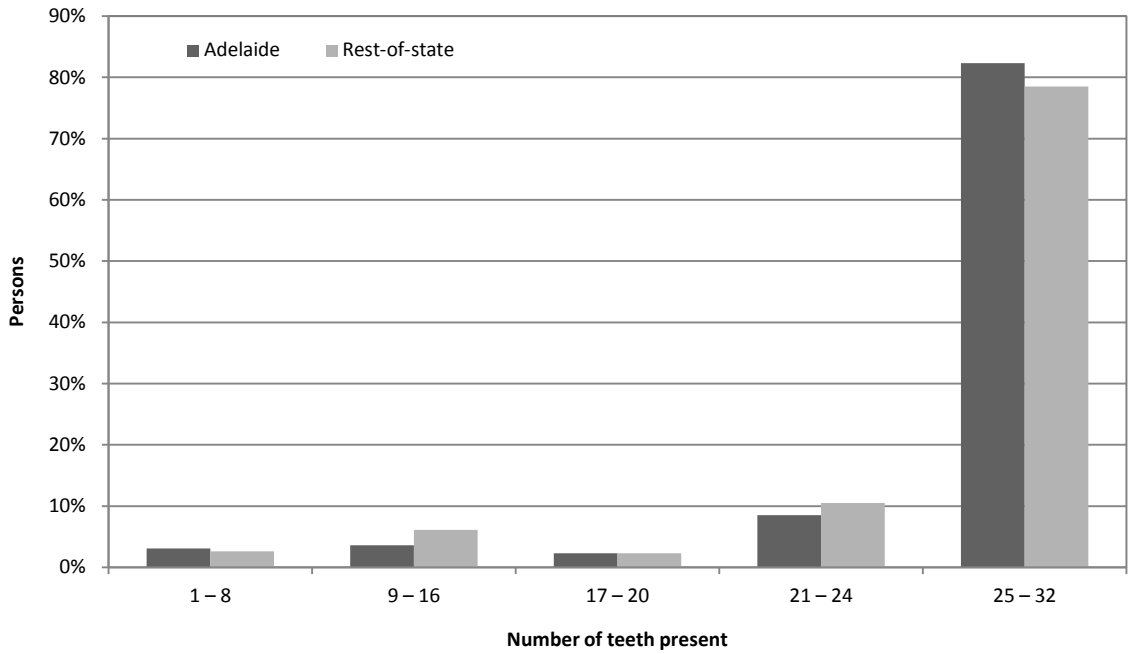

Figure 5.13: Frequency distribution of number of teeth present by region (Adelaide/rest-of-state), dentate persons aged 18 years and older

	Number of teeth present					
Persons (%)	**1–8**	**9–16**	**17–20**	**21–24**	**25–32**	**Total**
Adelaide	3.1	3.6	2.3	8.5	82.3	100.0
Rest-of-state	2.6	6.1	2.3	10.5	78.5	100.0
Total	**3.0**	**4.2**	**2.3**	**9.1**	**81.4**	**100.0**

Source: National Dental Telephone Interview Survey, 2008

- Dentate persons residing in Adelaide had a slightly higher percentage with 25–32 teeth present (82.3%) than those living outside Adelaide (78.5%).
- Adelaide residents also had a marginally higher percentage with 1–8 teeth remaining (3.1%) than those in the rest-of-state (2.6%); however, residents of Adelaide had a significantly lower percentage with 9–16 teeth remaining (3.6%) compared with the rest-of-state (6.1%).

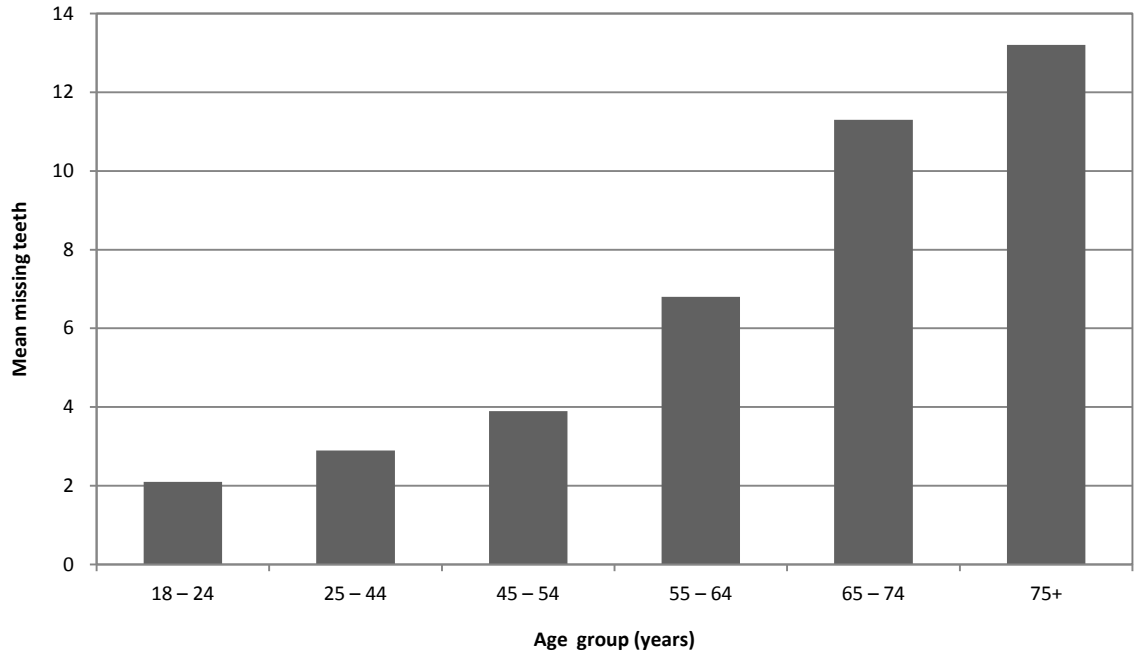

Figure 5.14: Mean number of missing teeth by age, dentate persons aged 18 years and older

	Age group (years)						
	18–24	**25–44**	**45–54**	**55–64**	**65–74**	**75+**	**Total**
Mean number missing teeth	2.1	2.9	3.9	6.8	11.3	13.2	4.8

Source: National Dental Telephone Interview Survey, 2008

- The mean number of missing teeth increased across older age groups.
- Those aged 18–24 years had an average of 2 .1 teeth missing, which had almost doubled to 3.9 among the 45–54 year-old group.
- Persons aged 75 years and older were, on average, missing 13.2 teeth.

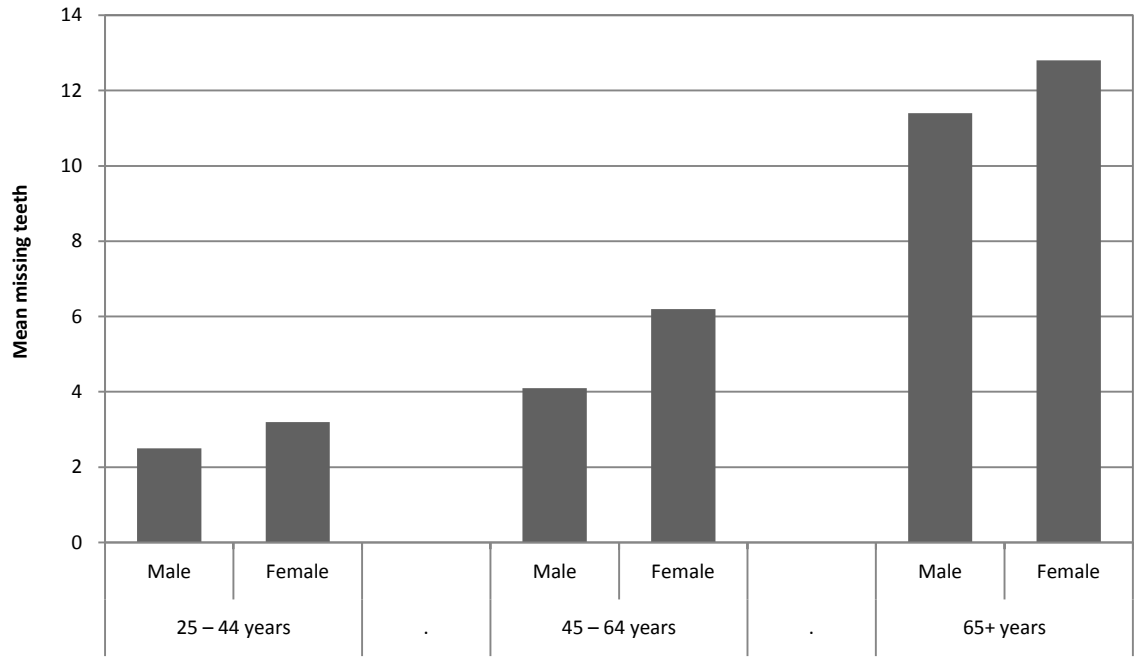

Figure 5.15: Mean number of missing teeth by age and sex, dentate persons aged 25 years and older

	25–44 years		45–64 years		65+ years	
	Male	Female	Male	Female	Male	Female
Mean number missing teeth	2.1	2.9	3.9	6.8	11.3	13.2

Source: National Dental Telephone Interview Survey, 2008

- In all age groups, dentate females were missing more teeth than males.
- The largest difference was seen between males and females aged 45–64 years, with males missing 3.9 teeth on average, significantly less than the average of 6.8 teeth for females.

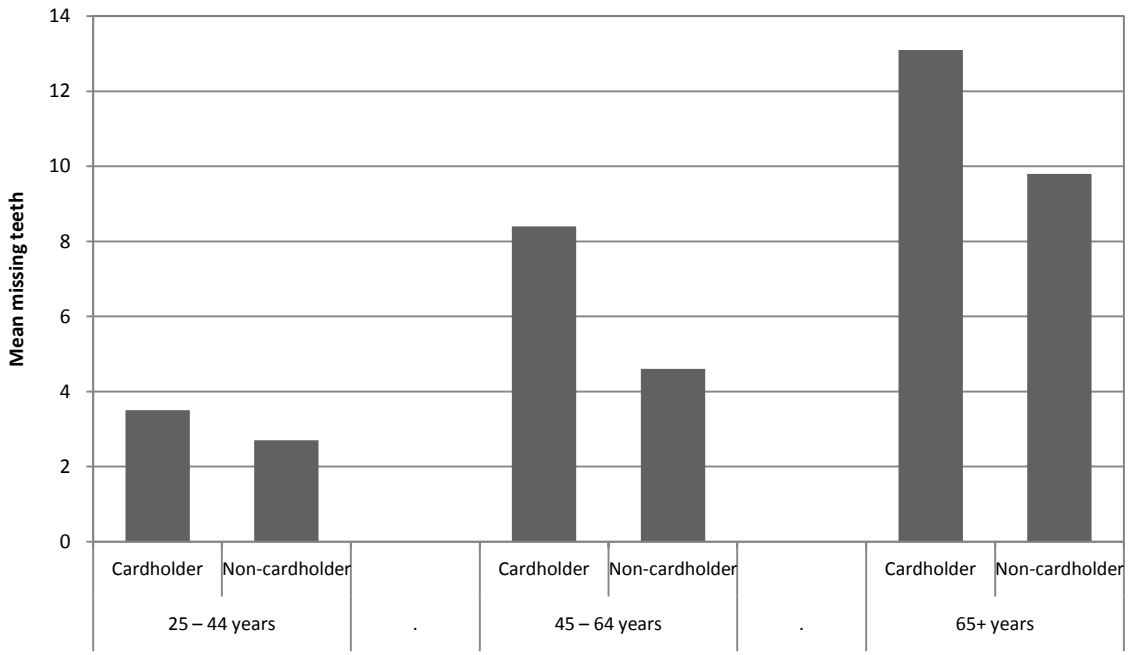

Figure 5.16: Mean number of missing teeth by age and cardholder status, dentate persons aged 25 years and older

	25–44 years		45–64 years		65+ years	
	Cardholder	Non-cardholder	Cardholder	Non-cardholder	Cardholder	Non-cardholder
Mean number missing teeth	3.5	2.7	8.4	4.6	13.1	9.8

Source: National Dental Telephone Interview Survey, 2008

- Dentate cardholders had a greater number of teeth missing than non-cardholder in all age groups.
- Among those aged 65 years and older cardholders had an average of 3.3 more teeth missing (13.1) than non-cardholders (9.8). The difference was greatest in the 45–64 years age group, with cardholders, on average, missing 8.4 teeth, 3.8 teeth more than non-cardholders, with an average of 4.6 teeth missing.

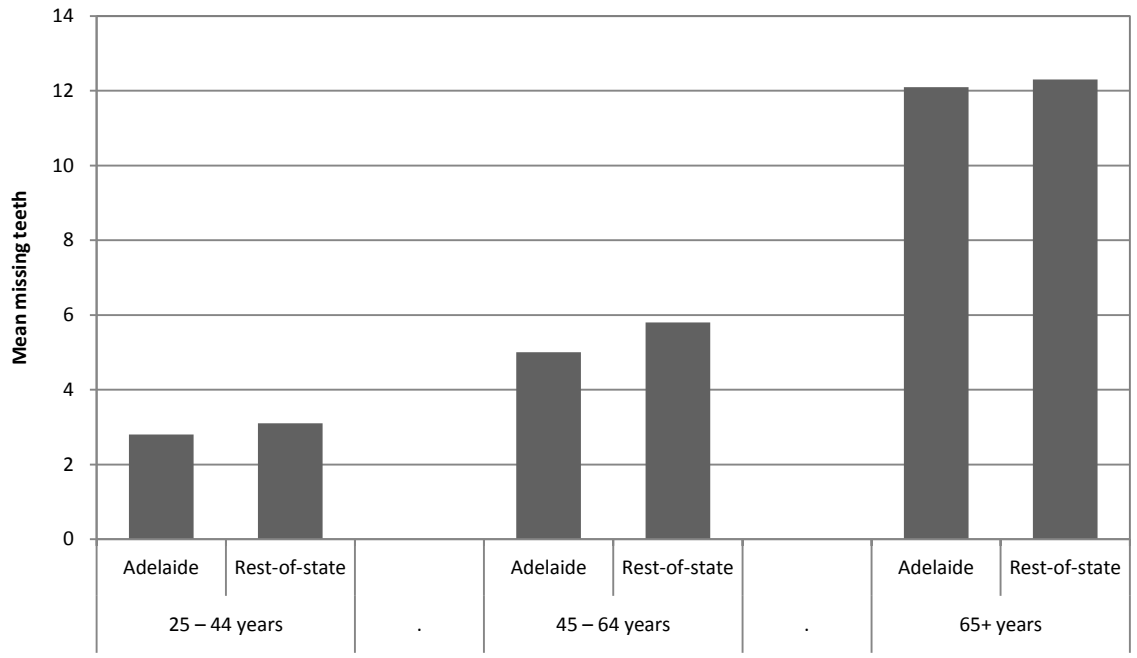

Figure 5.17: Mean number of missing teeth by age and region (Adelaide/rest-of-state), dentate persons aged 25 years and older

	25–44 years		45–64 years		65+ years	
	Adelaide	Rest-of-state	Adelaide	Rest-of-state	Adelaide	Rest-of-state
Mean number missing teeth	2.8	3.1	5.0	5.8	12.1	12.3

Source: National Dental Telephone Interview Survey, 2008.

- Those living in Adelaide and those outside Adelaide had comparable numbers of teeth missing in each age group.
- On average, 25–44-year-olds living in Adelaide had 2.8 teeth missing, compared with 3.1 teeth among those living outside Adelaide. Among those aged 65 years and older, Adelaide residents were missing 12.1 teeth on average, while those in the rest-of-state had 12.3 teeth missing.

Summary

- Edentulism increased across the older age groups, reaching 10% for 55–64-year-olds and 43.6% for those aged 75 years and older.
- Among the older age groups, males and females had a similar prevalence of edentulism at ages 45–64 years; however, females had a higher prevalence by 65 years and older, at 42.0% compared with 30.6% for males.
- Cardholders had a higher prevalence of edentulism than non-cardholders in both age groups. At age 65 years and older, more than twice the percentage of cardholders (41.8%) were edentulous compared with non-cardholders (20.6%).
- The prevalence of edentulism among non-Adelaide residents was higher than that among Adelaide residents for both age groups.
- From 1979 to 2005 the overall prevalence of edentulism decreased, from 23.3% to 6.4%. In 2008 there was an increase in the prevalence to 6.8%.
- The percentage of dentate people wearing dentures increased across older age groups, from 3.1% at ages 18–44 years to 47.9% at ages 75 years and older.
- Among the older age groups, a higher percentage of females than males wore dentures. Among 45–64-year-olds, less than 10% of males wore dentures, while almost 20% of females wore dentures. More than half of females aged 65 years and older wore dentures compared with 34.8% of males.
- The percentage of cardholders wearing dentures was higher than non-cardholders. For cardholders, one-quarter of 45–64 year-olds and half of those aged 65 years and older wore dentures, compared with 9.0% of 45–64-year-olds and 28.6% of the 65 years and older age groups among non-cardholders.
- Among 45–64 year-olds, Adelaide residents showed a higher percentage wearing dentures (12.7%) than non-Adelaide residents (8.9%). This was reversed among those aged 65 years and older, with 42.2% of Adelaide residents and 47.1% of non-Adelaide residents wearing dentures.
- Over 90% of persons aged 18–44 years retained 25–32 teeth. The percentage with 25–32 teeth decreased across older age groups, reaching the lowest level among 65–74-year-olds (39.9%) and increasing to 46.9% among those aged 75 years and older. The percentage of people with 1–8 teeth remaining increased from 2.3 among 55–64-year-olds, to 24.9% among those aged 75 years and older. Similarly, the percentage of people with 9–16 teeth remaining increased across older age groups to 16.1% among those aged 75 years and older. The percentage of people with 17–24 teeth present was fairly constant across age groups, excepting an anomalous 24.5% of 65–74-year-olds with 21–24 teeth.
- Females had a lower percentage with 25–32 teeth present (77.5%) than did males (85.6%), and higher percentage in each other category. This coincided with the higher prevalence of denture-wearing among older females than males.
- Cardholders had significantly higher percentages with 1–8 teeth (9.8%) and 9–16 teeth (10.8%) remaining than non-cardholders (0.8% and 2.1% respectively). Cardholders also had a significantly lower percentage with 25–32 teeth present (65.2%) than non-cardholders (86.7%).

- Similar percentages of Adelaide and non-Adelaide residents had 1–8 or 17–20 teeth present, while a slightly higher percentage of non-Adelaide residents had 9–16 or 21–24 teeth present. Of Adelaide residents, 82.3% had 25–32 teeth present, compared with 78.5% of non-Adelaide residents; however, this difference was not significant.
- The average number of missing teeth increased across older age groups, from 2.1 teeth at ages 18–24 years to 13.2 at age 75 years and older.
- Females had a higher average number of missing teeth than males in each age group. The biggest difference was seen among those aged 45–64 years, with females missing 6.8 and males missing 3.9 teeth on average. This difference was significant.
- The mean number of missing teeth was higher among cardholders than non-cardholders across all age groups. Again, the largest difference was among 45–64-year-olds, with cardholders missing 8.4 and non-cardholders missing 4.6 teeth on average, also a significant difference. The difference was also significant among those aged 65 years and older, with 13.1 teeth missing for cardholders and 9.8 for non-cardholders.
- There were no significant differences between the average numbers of missing teeth among Adelaide residents compared with non-Adelaide residents. Those living outside Adelaide had a slightly higher average in each age group than Adelaide residents.
- From the above analysis, females, cardholders and non-Adelaide residents have greater tooth loss than males, non-cardholders and Adelaide residents. As periodontal disease and caries are considered to be the two biggest causes of tooth loss, it is interesting to note that the prevalence of both caries experience and periodontal health issues were found to be lower among females than males, and the prevalence of periodontal disease was found to be lower among non-Adelaide residents. This may indicate a health survivor effect.

6 Indigenous oral health

Children

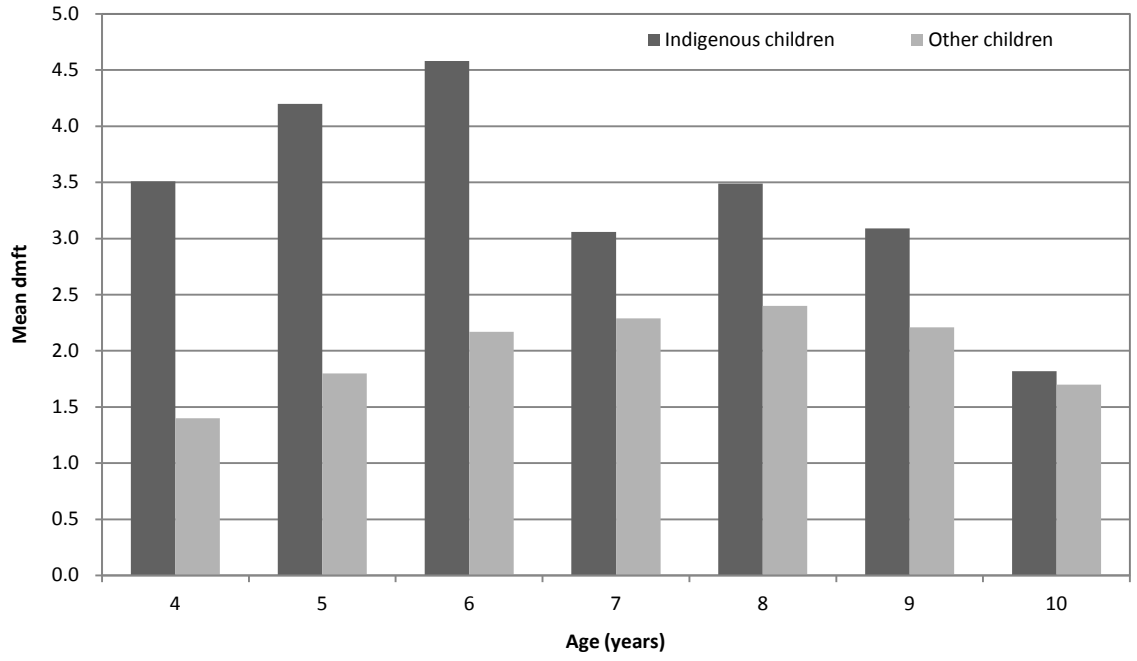

Figure 6.1: Deciduous dentition: mean dmft by Indigenous status and age, children attending School Dental Service

Mean dmft	4 years	5 years	6 years	7 years	8 years	9 years	10 years
Indigenous children	3.51	4.20	4.58	3.06	3.49	3.09	1.82
Other children	1.40	1.80	2.17	2.29	2.40	2.21	1.70

Source: Child Dental Health Survey, 2008

- Caries experience in the deciduous dentition for Indigenous children aged 4–10 years was consistently higher than that for non-Indigenous children in the community.
- Indigenous children aged 4–6 years had twice the number of teeth affected by caries than non-Indigenous children at each year of age.

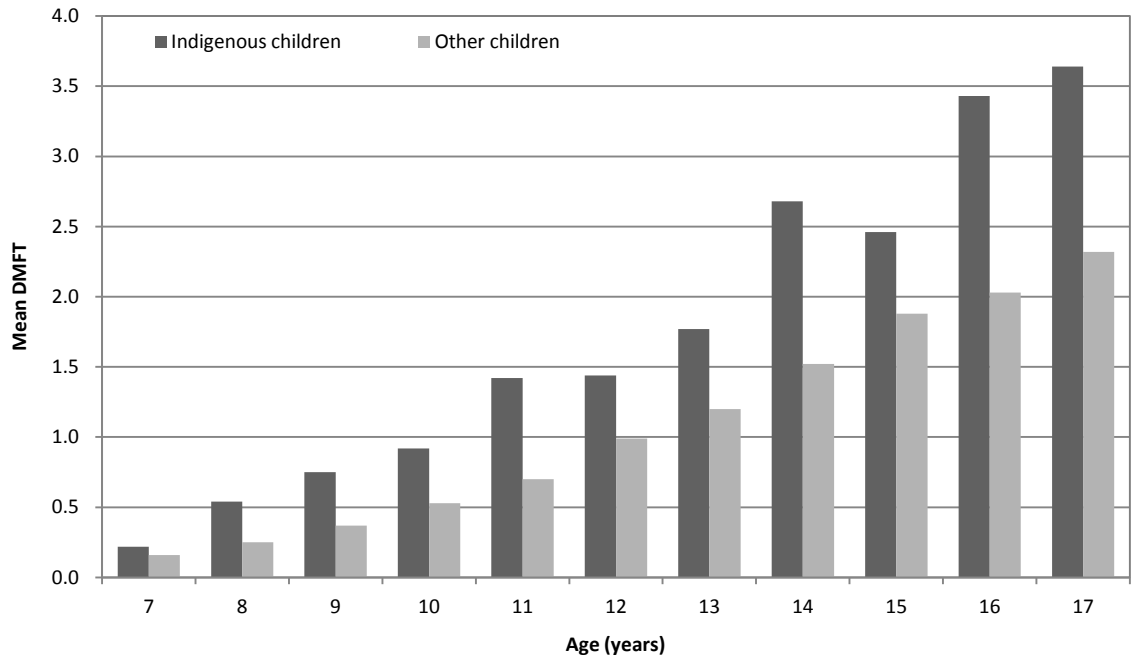

Figure 6.2: Permanent dentition: mean DMFT by Indigenous status and age, children attending School Dental Service

Mean DMFT	7 years	8 years	9 years	10 years	11 years	12 years	13 years	14 years	15 years	16 years	17 years
Indigenous children	0.22	0.54	0.75	0.92	1.42	1.44	1.77	2.68	2.46	3.43	3.64
Other children	0.16	0.25	0.37	0.53	0.70	0.99	1.20	1.52	1.88	2.03	2.32

Source: Child Dental Health Survey, 2008

- Caries experience in permanent dentition for Indigenous children aged 4–17 years was consistently higher than that for non-Indigenous children in the community.

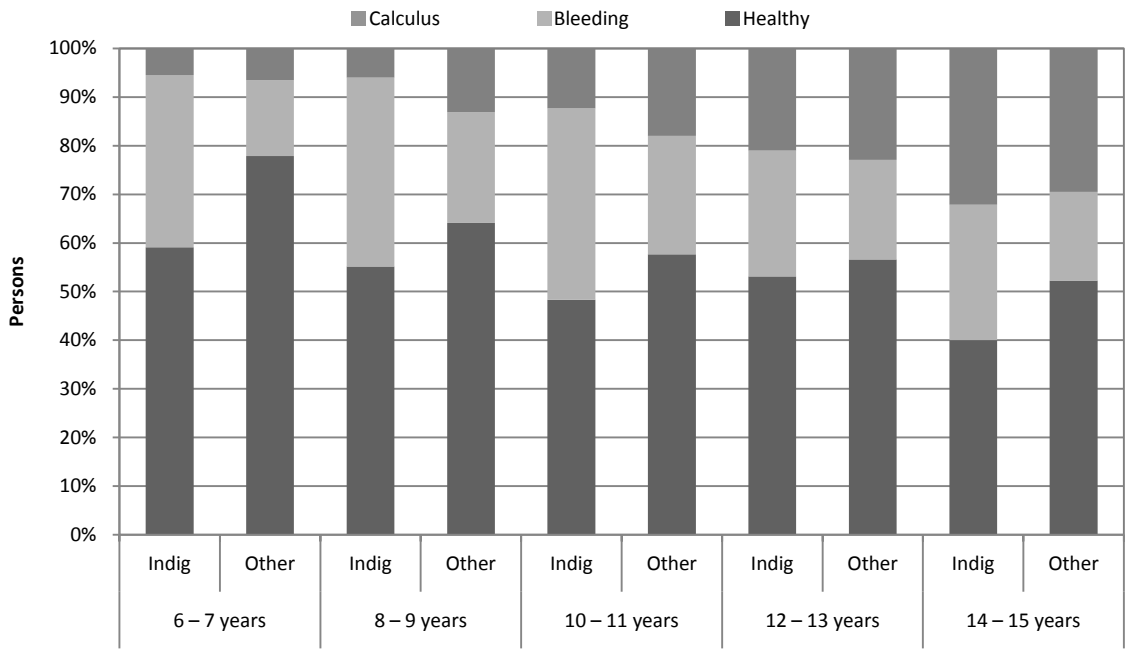

Figure 6.3: Percentage of children with calculus and gingival bleeding by Indigenous status and age, children attending School Dental Service

	Persons (%)	6–7 years	8–9 years	10–11 years	12–13 years	14–15 years
Indigenous children	Healthy	59.2	54.6	48.3	53.1	40.0
	Bleeding	35.4	38.5	39.4	25.9	27.9
	Calculus	5.5	5.9	12.3	21.0	32.1
Other children	Healthy	77.9	64.1	57.7	56.7	52.3
	Bleeding	15.6	22.8	24.3	20.5	18.3
	Calculus	6.5	13.1	18.0	22.9	29.5

Source: Child Dental Health Survey, 2008

- Indigenous children had a higher prevalence of bleeding than other children. This pattern was seen in each pair of ages. At ages 6–7 years, 35.4% of Indigenous children had gingival bleeding compared with 15.6% of other children.
- However, Indigenous children had a lower prevalence of calculus present on their teeth than other children, except for the 14–15 years age group. At 8–9 years of age, 5.9% of Indigenous children had calculus present compared with 13.1% of other children. The difference in prevalence of calculus between Indigenous and non-Indigenous children decreased across older aged children, and levels were almost the same at ages 14–15 years.

Adults

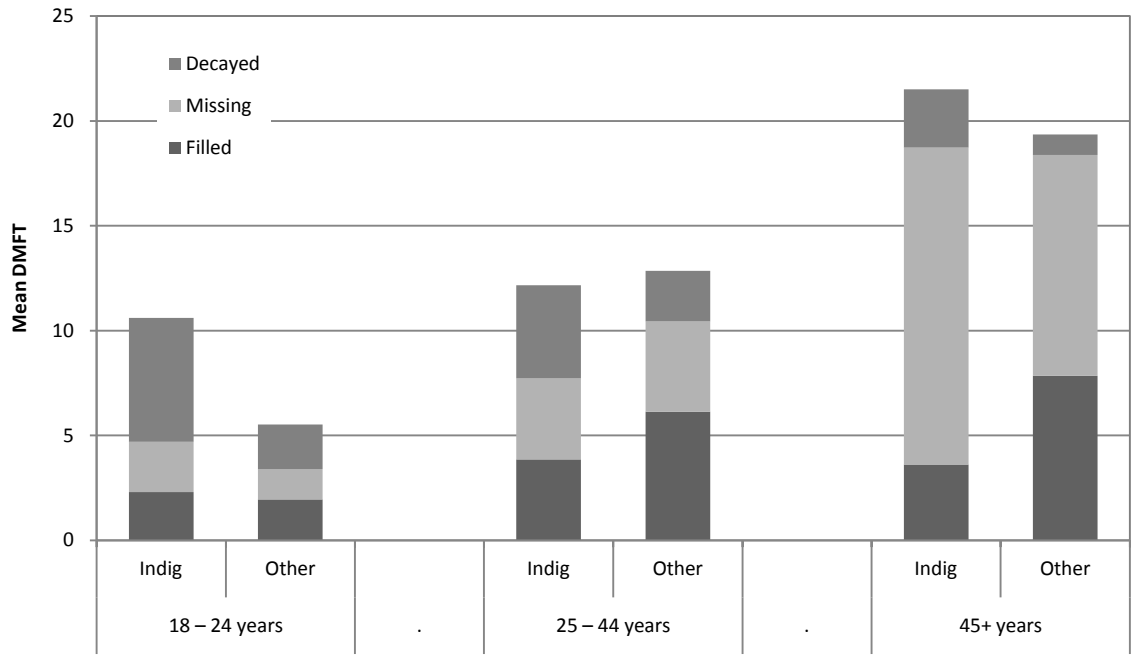

Figure 6.4: Mean DMFT by Indigenous status and age, persons aged 18 years and older

	Mean DMFT	18–24 yrs	25–44 yrs	45+ yrs	Total
Indigenous	Decayed	5.90	4.44	2.78	3.89
	Missing	2.40	3.86	15.11	8.62
	Filled	2.30	3.86	3.61	3.56
	Total	**10.60**	**12.17**	**21.50**	**16.07**
Other	Decayed	2.11	2.41	0.97	1.30
	Missing	1.45	4.30	10.54	8.95
	Filled	1.96	6.14	7.84	7.28
	Total	**5.52**	**12.85**	**19.35**	**17.53**

Source: Adult Dental Programs Survey, 2006

- Both Indigenous and non-Indigenous groups showed an increase in the mean DMFT across age groups. Overall, Indigenous people had a higher average number of teeth with untreated decay, and fewer filled teeth than non-Indigenous people.
- Indigenous people aged 18 – 24 years had 2.8 times the mean number of teeth with untreated decay than non-Indigenous people (5.9 and 2.1).
- On average, Indigenous persons aged 65+ years had approximately 5 more teeth missing than non-Indigenous (15.1 and 10.5). Missing teeth accounted for 70% of DMFT among Indigenous people in this age group.

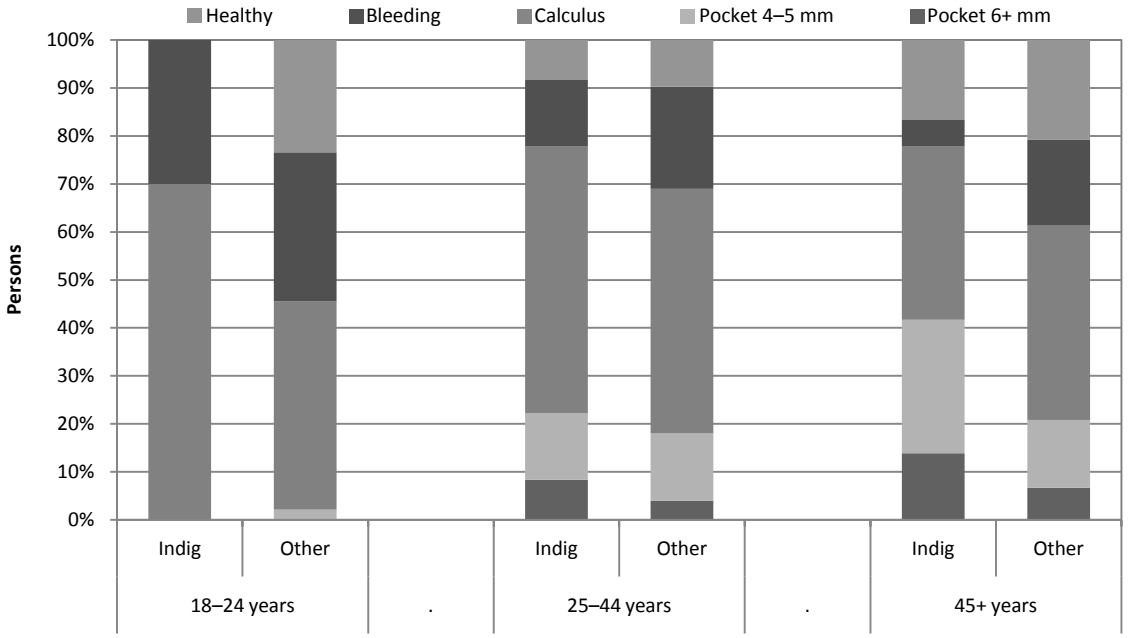

Figure 6.5: Maximum Community Periodontal Index (CPI) by age, Indigenous persons aged 18 years and older

	Maximum CPI (%)	18–24 yrs	25–44 yrs	45+ yrs	Total
Indigenous	Healthy	0.0	8.3	16.7	**11.0**
	Bleeding	30.0	13.9	5.6	**12.2**
	Calculus	70.0	55.6	36.1	**48.8**
	Pocket 4–5 mm	0.0	13.9	27.8	**18.3**
	Pocket 6+ mm	0.0	8.3	13.9	**9.8**
Other	Healthy	23.4	9.7	20.7	**18.6**
	Bleeding	31.1	21.3	18.0	**19.1**
	Calculus	43.4	51.0	40.5	**42.7**
	Pocket 4–5 mm	2.1	14.0	14.2	**13.7**
	Pocket 6+ mm	0.0	4.0	6.7	**5.9**

Source: Adult Dental Programs Survey, 2006

- Overall, Indigenous persons had a higher percentage of calculus and pockets of 4–5 and 6+ mm in depth than non-Indigenous persons.
- Among Indigenous individuals, the percentage of people with pockets of 4–5 and 6+ mm in depth increased across age groups. The percentage with bleeding and calculus decreased.
- A lower percentage of Indigenous than non-Indigenous persons had healthy gums in all age groups, while twice as high a percentage of Indigenous people had pockets 6+ mm.

Summary

Children

- Between ages 4 and 10 years, Indigenous children had a consistently higher mean dmft than non-Indigenous children. Mean dmft peaked earlier for Indigenous children, at 4.58 teeth at age 6 years, compared with 3.49 teeth at 8 years of age for non-Indigenous children. The decrease in dmft among non-Indigenous children was primarily explained by exfoliation.
- In the permanent dentition, mean DMFT was higher among Indigenous children than non-Indigenous for all ages from 7 to 17 years. Mean DMFT for both populations increased across older age groups; however, the Indigenous average increased by slightly more than the non-Indigenous average. At age 17 years, Indigenous children had an average of 1.57 more teeth with caries experience.
- Non-Indigenous children had a higher percentage with healthy gums than Indigenous children across each age group from 6 to 15 years. The biggest difference was seen among 6–7-year-olds, with 59.2% of Indigenous and 77.9% of non-Indigenous children recording healthy gums. Bleeding was more prevalent among Indigenous children than non-Indigenous in all age groups; however, calculus was more prevalent among non-Indigenous children in all age groups except 14–15-year-olds.
- Indigenous children had poorer oral health in relation to caries in either the deciduous or permanent dentition and in periodontal health.

Adults

- Mean DMFT among Indigenous adults increased from 10.60 for 18–24-year-olds to 21.50 for those aged 45 years and older. Among 18–24-year-olds, untreated decay was the largest contributor to DMFT, at 5.90 teeth. Untreated decay decreased to 2.78 among 45+ year-olds. The majority of the DMFT among Indigenous persons aged 45 years and older was due to missing teeth, with 15.11 teeth missing due to decay. Compared to Indigenous adults, non-Indigenous persons had a higher mean DMFT, mostly due to a higher average number of filled teeth (7.28 among non-Indigenous compared with 3.56 among Indigenous persons).
- While the percentage of Indigenous persons with healthy gums increased across age groups, a consistent increase in prevalence was also observed for pockets of both 4–5 mm and of 6+ mm. Among those aged 45 years and over, more than 40% of Indigenous persons had pockets of at least 4 mm in depth. In comparison, only 20.9% of non-Indigenous persons had pockets of at least 4 mm. A higher percentage of non-Indigenous than indigenous persons had healthy gums in each age group, in particular ages 18 – 24 years, in which no Indigenous person had healthy gums.

7 Preventive interventions

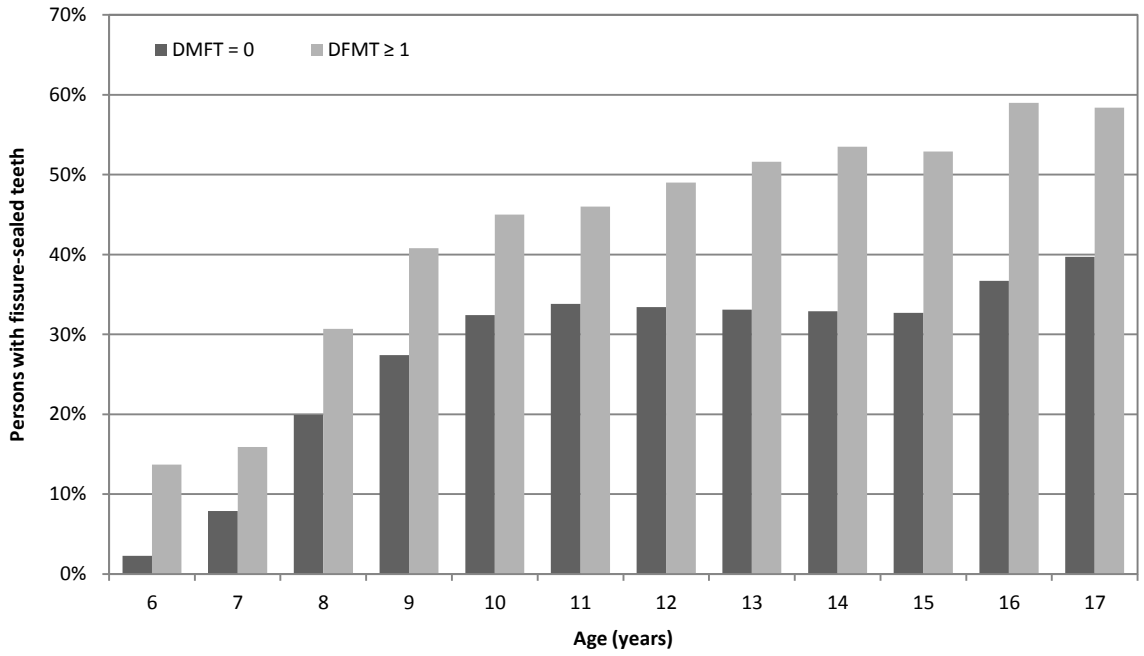

Figure 7.1: Percentage of children with fissure-sealed teeth by DMFT status and age, children attending School Dental Service

Persons with fissure-sealed teeth (%)	6 years	7 years	8 years	9 years	10 years	11 years	12 years	13 years	14 years	15 years	16 years	17 years
DMFT = 0	2.3	7.9	19.9	27.4	32.4	33.8	33.4	33.1	32.9	32.7	36.7	39.7
DFMT ≥ 1	13.7	15.9	30.7	40.8	45.0	46.0	49.0	51.6	53.5	52.9	59.0	58.4

Source: Child Dental Health Survey, 2008

- The prevalence of sealants was higher among children who attended the School Dental Service with caries experience in their permanent teeth (DMFT>0) than children with no caries experience (DMFT=0).
- At age 6 years, 13.7% of children with caries experience in their permanent teeth had at least one fissure-sealed tooth compared with only 2.3% of children with no caries experience.
- At 12 years of age, 49.0% of children with caries experience had at least one fissure-sealed tooth compared with 33.4% of children with no caries experience.
- At 17 years of age, 58.4% of children with caries experience and 39.7% of children without caries experience had at least one fissure-sealed tooth on their permanent dentition.

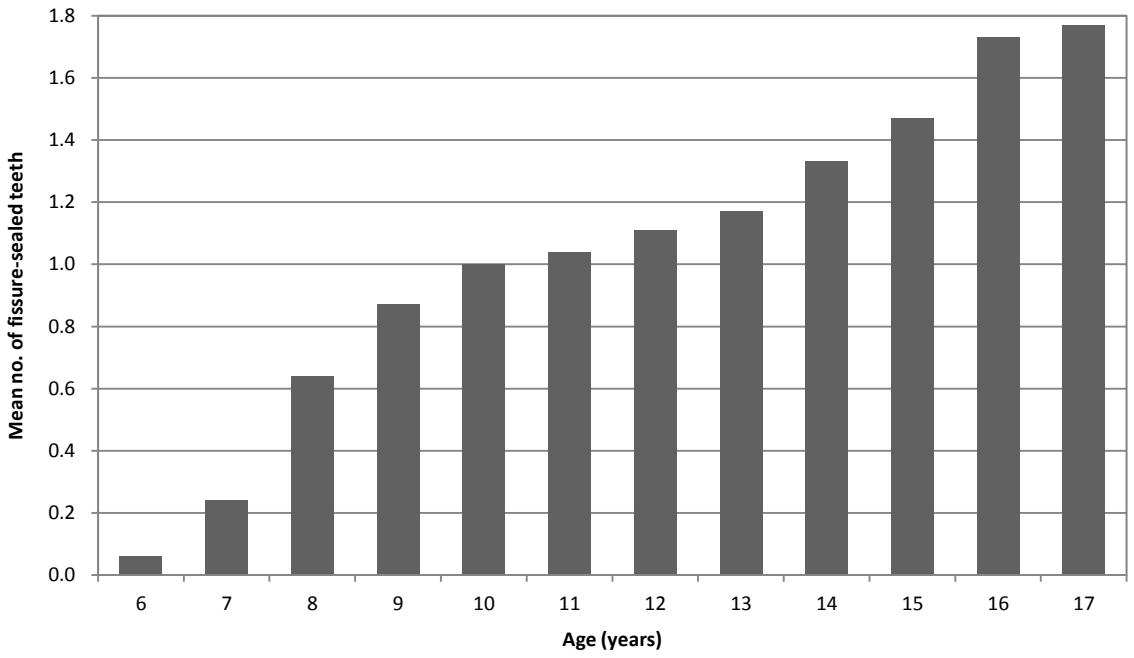

Figure 7.2: Mean number of fissure-sealed teeth by age, children attending School Dental Service

	6 years	7 years	8 years	9 years	10 years	11 years	12 years	13 years	14 years	15 years	16 years	17 years
Mean sealants	0.1	0.2	0.6	0.9	1.0	1.0	1.1	1.2	1.3	1.5	1.7	1.8

Source: Child Dental Health Survey, 2008

- The mean number of fissure sealants present in children attending the School Dental Service increased steadily across older aged children.
- On average, children aged 10 and 11 years had one fissure-sealed tooth and children aged 17 years had almost two fissure-sealed teeth.

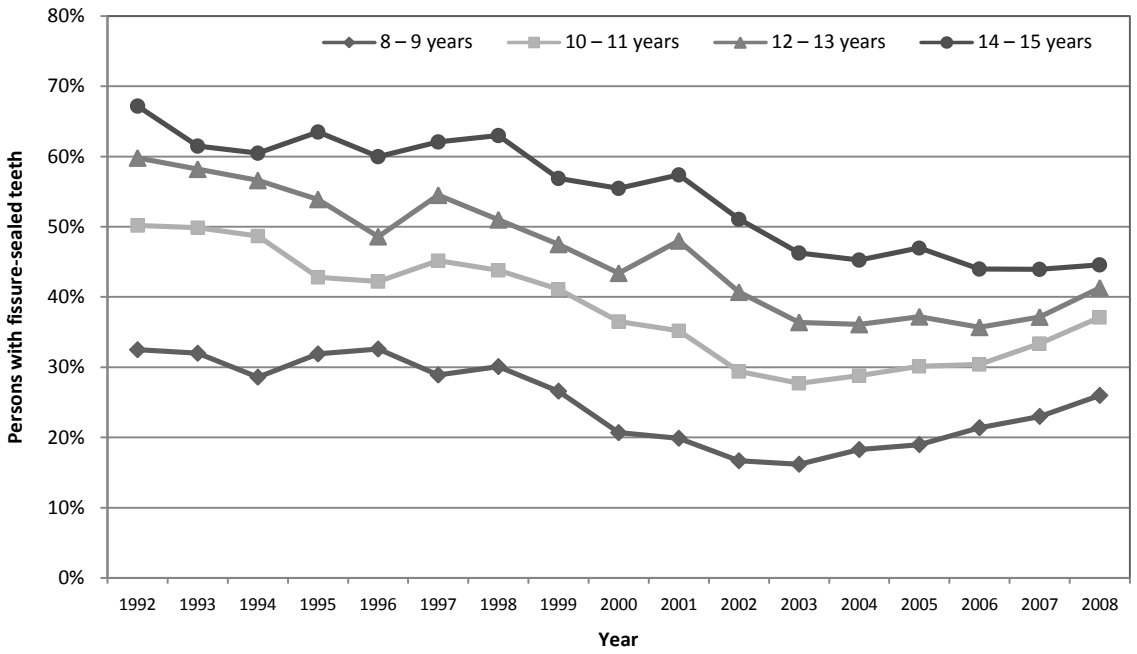

Figure 7.3: Percentage of children with fissure-sealed teeth by age for years 1992–2008, children attending School Dental Service

Children with fissure-sealed teeth (%)	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
8–9 years	32.5	32.0	28.6	31.9	32.6	28.9	30.1	26.6	20.7	19.9	16.7	16.2	18.3	19.0	21.4	23.0	26.0
10–11 years	50.2	49.9	48.7	42.8	42.2	45.2	43.8	41.1	36.5	35.2	29.4	27.7	28.8	30.1	30.4	33.4	37.1
12–13 years	59.8	58.2	56.6	53.9	48.6	54.5	51.0	47.5	43.4	48.0	40.7	36.4	36.1	37.2	35.7	37.2	41.3
14–15 years	67.2	61.5	60.5	63.5	60.0	62.1	63.0	56.9	55.5	57.4	51.1	46.3	45.3	47.0	44.0	44.0	44.6

Sources: Child Dental Health Surveys, 1992–2008

- During the period 1992–2004, the number of children who attended the School Dental Service with fissure-sealed teeth declined significantly. For children aged 8–9 years, the percentage with fissure-sealed teeth halved during this period. Similar declines occurred in all other age groups, with the percentage of 10–11-year-old children with fissure sealants declining from 50.2% in 1992 to 28.8% in 2004, the percentage of 12–13-year-old children from 59.8% in 1992 to 36.1% in 2004, and the percentage of 14–15-year-old children from 67.2% in 1992 to 45.3% in 2004.
- Since 2004 the percentage of children with fissure-sealed teeth significantly increased, particularly in the younger age groups (8–9 and 10–11 years old).

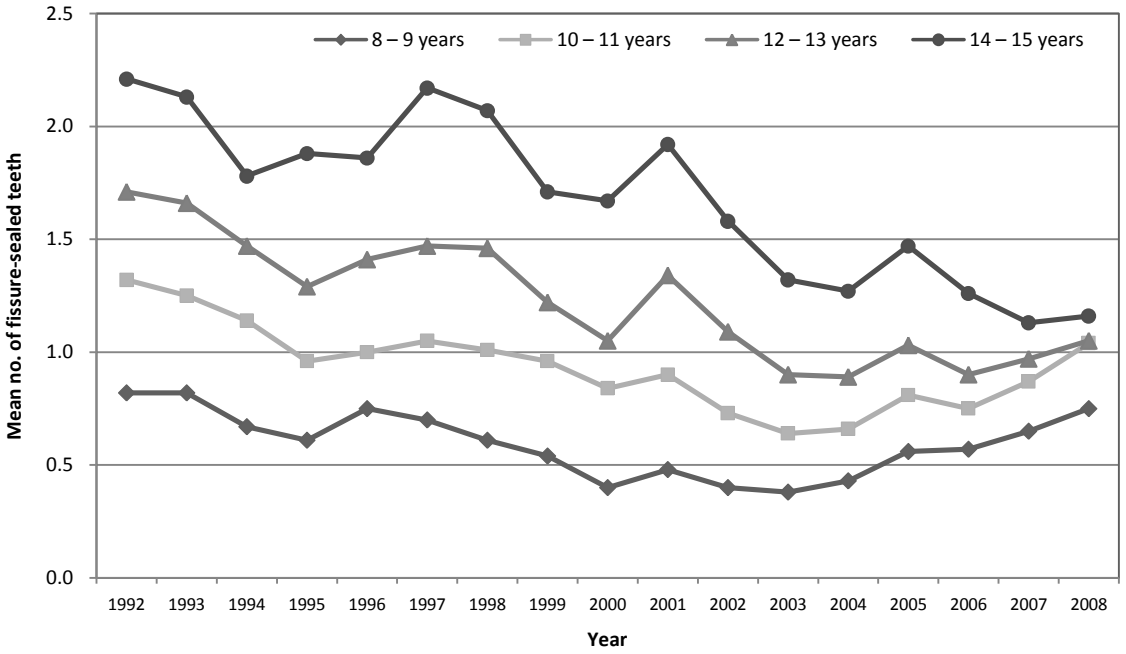

Figure 7.4: Mean number of fissure-sealed teeth by age for years 1992–2008, children attending School Dental Service

Mean sealants	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
8–9 years	0.8	0.8	0.7	0.6	0.8	0.7	0.6	0.5	0.4	0.5	0.4	0.4	0.4	0.6	0.6	0.7	0.8
10–11 years	1.3	1.3	1.1	1.0	1.0	1.1	1.0	1.0	0.8	0.9	0.7	0.6	0.7	0.8	0.8	0.9	1.0
12–13 years	1.7	1.7	1.5	1.3	1.4	1.5	1.5	1.2	1.1	1.3	1.1	0.9	0.9	1.0	0.9	1.0	1.1
14–15 years	2.2	2.1	1.8	1.9	1.9	2.2	2.1	1.7	1.7	1.9	1.6	1.3	1.3	1.5	1.3	1.1	1.2

Sources: Child Dental Health Surveys, 1992–2008

- During the 12-year period from 1992 to 2004, the average number of fissure-sealed teeth declined in all age groups. In 1992 the mean number of fissure-sealed teeth for children aged 8–9 years was 0.82. This steadily declined to 0.38 by 2003. Similarly, the average number of fissure-sealed teeth present in children aged 10–11 years declined from 1.32 in 1992 to 0.66 in 2004. The number also decreased sharply among the 12–13 and 14–15-year-old groups.
- Since 2004 the mean number of fissure sealed teeth has increased significantly in the two younger age groups. For 8–9-year-old children, the number of fissure-sealed teeth has doubled from 0.43 in 2004 to 0.86 in 2008.

Summary

- The prevalence of fissure sealants increased across older aged children, with a sharp increase evident from ages 7 to 9 years. Across 9 to 17 years of age, the gradient of increase was less for those with caries experience, reaching 58.4% among 17-year-olds. For those with no caries experience, prevalence of fissure sealants decreased until age 15 years (32.7%) before it increased to 39.7% for 17-year-olds.
- From ages 6 to 17 years, the mean number of fissure-sealed teeth increased consistently, with a sharper increase from ages 6 to 10 years. By age 10 years, children had an average of one tooth with a fissure sealant, 10 times the average among 6-year-olds (0.1). The average increased to 1.2 at age 13 years and to 1.8 at age 17 years.
- Since 1992 the prevalence of fissure sealants trended downwards, until 2004. From 2004 to 2008 the prevalence increased for 8–9 and 10–11-year-olds by around 10%. In the two older age groups, the prevalence remained relatively constant; however, an increase of about 6% was seen for 12–13-year-olds between 2006 and 2008.
- A similar pattern was seen for the mean number of fissure sealants among 8–15-year-olds. Despite some fluctuation, the average number trended downwards until around 2003. Among 8–9 and 10–11-year-olds, the average then increased continuously until 2008, but only to a total of 0.2 of a tooth. The average among 12–13-year-olds levelled out but showed an increase from 2006 to 2008 of 0.2 of a tooth. The decline continued among 14–15-year-olds until 2007, after which there was an increase of 0.1 of a tooth in 2008.
- Overall, both the prevalence and the mean number of fissure sealants were lower in 2008 than in 1992. The variations seen for these two measures over time could reflect changes in the oral health of children attending the School Dental Services or changes in the preference for various treatments and interventions in the School Dental Service.

8 Use of dental services

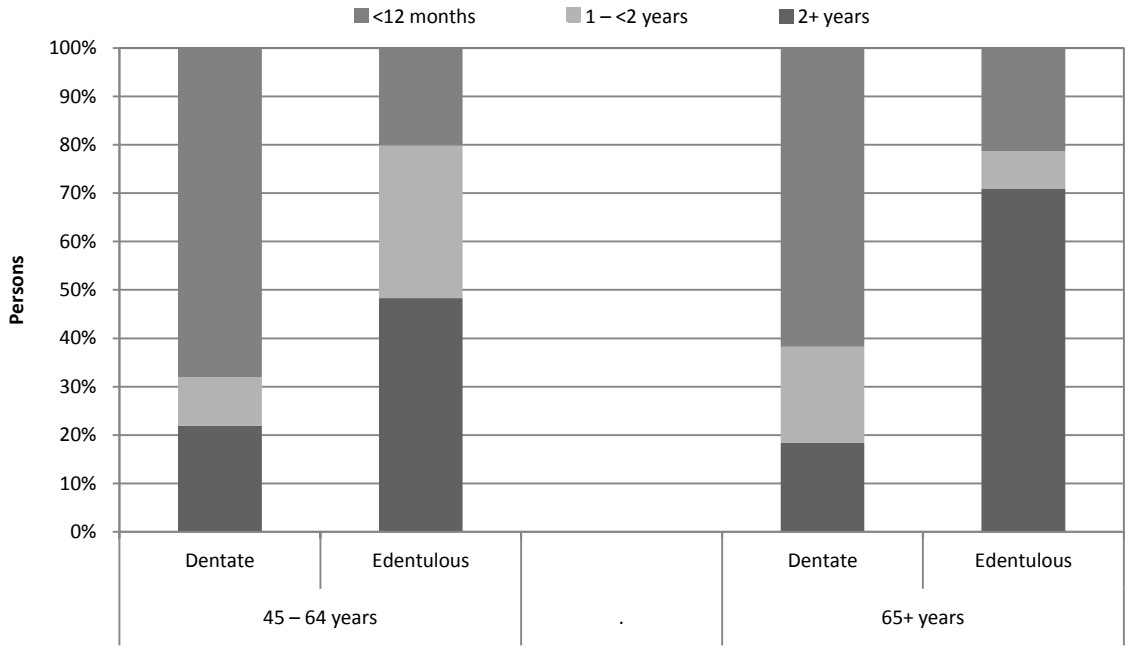

Figure 8.1: Time since last dental visit by dentate status and age, persons aged 45 years and older

Time since last dental visit (%)	45–64 years		65+ years	
	Dentate	Edentulous	Dentate	Edentulous
<12 months	68.1	20.1	61.8	21.3
1 – <2 years	10.1	31.6	19.9	7.8
2+ years	21.9	48.3	18.4	70.8
Total	**100.0**	**100.0**	**100.0**	**100.0**

Note: There were no edentulous persons under the age of 45 years reported.

Source: National Dental Telephone Interview Survey, 2008

- A greater percentage of dentate persons visited the dentist in the previous 12 months in both age groups (68.1% for 45–64-year-olds and 61.8% for those aged 65 years and older) than edentulous persons.
- Almost half (48.3%) of edentulous people aged 45–64 years had not made a dental visit in the last 2 years. A significant majority of those aged 65 years and older (70.8%) had not had a dental visit in the last 2 years.
- Among dentate people, about one in five had not visited a dentist in the previous 2 years.

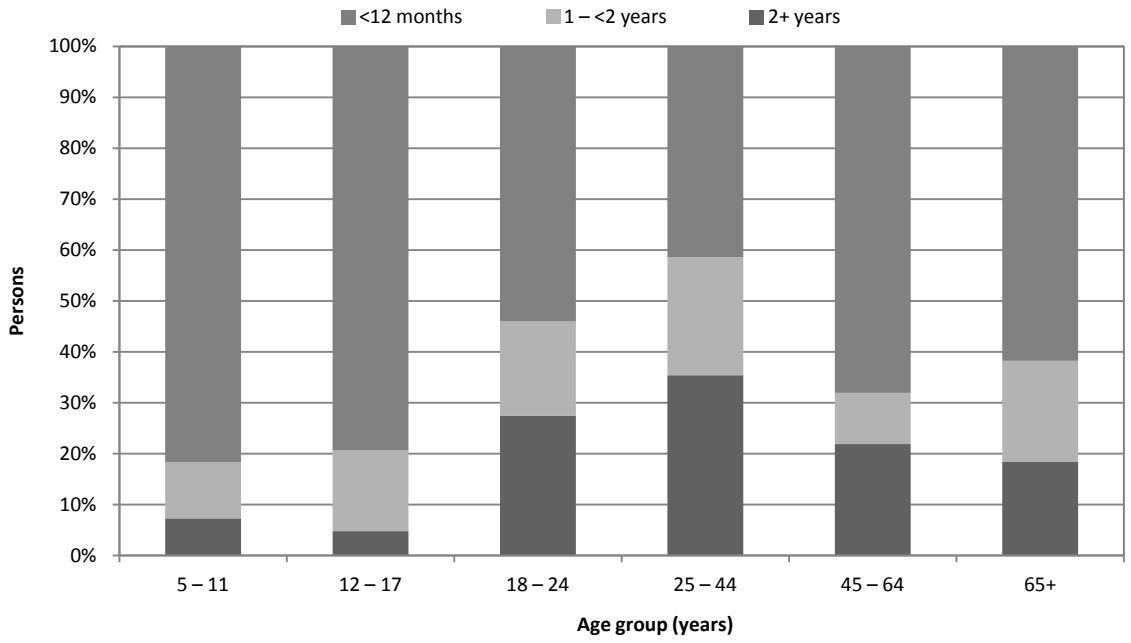

Figure 8.2: Time since last dental visit by age, dentate persons aged 5 years and older

Time since last dental visit (%)	5–11 years	12–17 years	18–24 years	25–44 years	45–64 years	65+ years
<12 months	81.7	79.4	54.0	41.4	68.1	61.8
1 – <2 years	11.0	15.8	18.5	23.2	10.1	19.9
2+ years	7.3	4.8	27.4	35.4	21.9	18.4
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: National Dental Telephone Interview Survey, 2008

- Children aged 5–11 years had the highest percentage of people who visited a dentist in the previous 12 months (81.7%), followed by children aged 12–17 years (79.4%)
- Persons aged 25–44 years had the lowest percentage of people who had made a dental visit in the previous 2 years.
- A lower percentage of persons aged 65 years and older than those aged 45–64 years visited a dentist in the previous 12 months (61.8% and 68.1%), but almost double the percentage who visited more than one year but less than two years ago (19.9% and 10.1%). Persons aged 45 years or older had a higher percentage of people who visited in the previous two years and either 18–24 or 25–44 year olds.

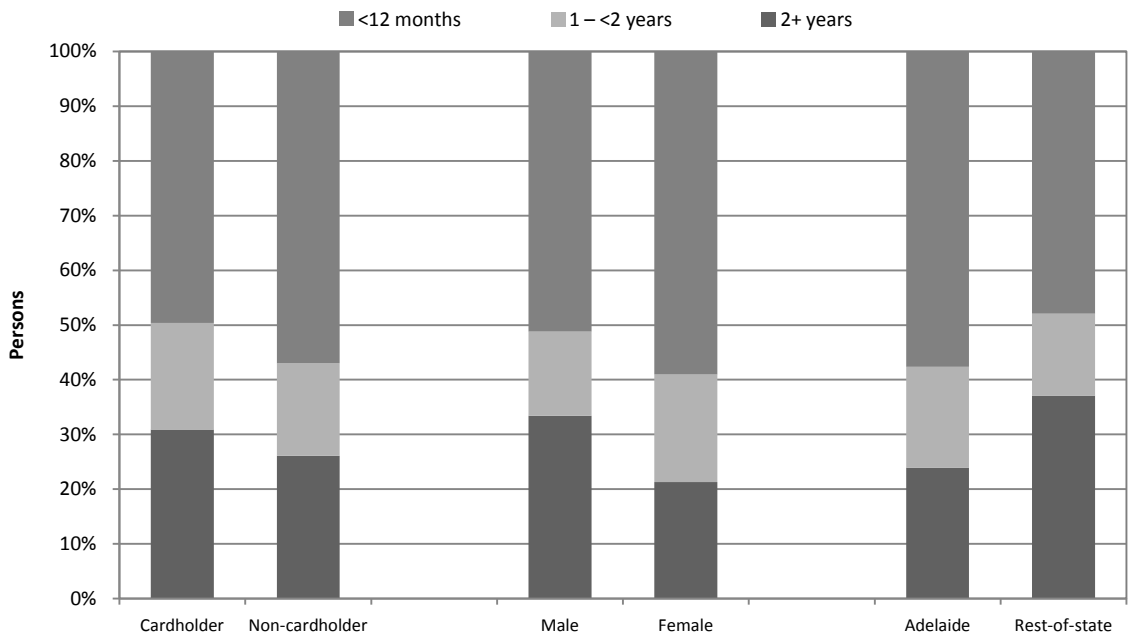

Figure 8.3: Time since last dental visit by cardholder status, sex and region (Adelaide/ rest-of-state), dentate persons aged 18 years and older

Time since last dental visit (%)	Cardholder status		Sex		Region		Total
	Cardholder	Non-cardholder	Male	Female	Adelaide	Rest-of-state	
<12 months	49.6	57.0	51.2	59.0	57.6	47.9	55.1
1 – <2 years	19.5	16.9	15.4	19.6	18.4	15.0	17.6
2+ years	30.9	26.1	33.4	21.3	23.9	37.1	27.3
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: National Dental Telephone Interview Survey, 2008

- Among both cardholders and non-cardholders, the highest percentage of people had visited a dentist in the previous 12 months (49.6% for cardholders and 57.0% for non-cardholders). A higher percentage of cardholders (30.9%) than non-cardholders (26.1%) had not visited a dentist in the previous 2 years.
- A higher percentage of females (78.6%) than males (66.6%) had made a dental visit in the previous 2 years.
- Those living outside Adelaide had a higher percentage of people who had not seen a dentist in the previous 2 years (37.1%) than Adelaide residents (23.9%).

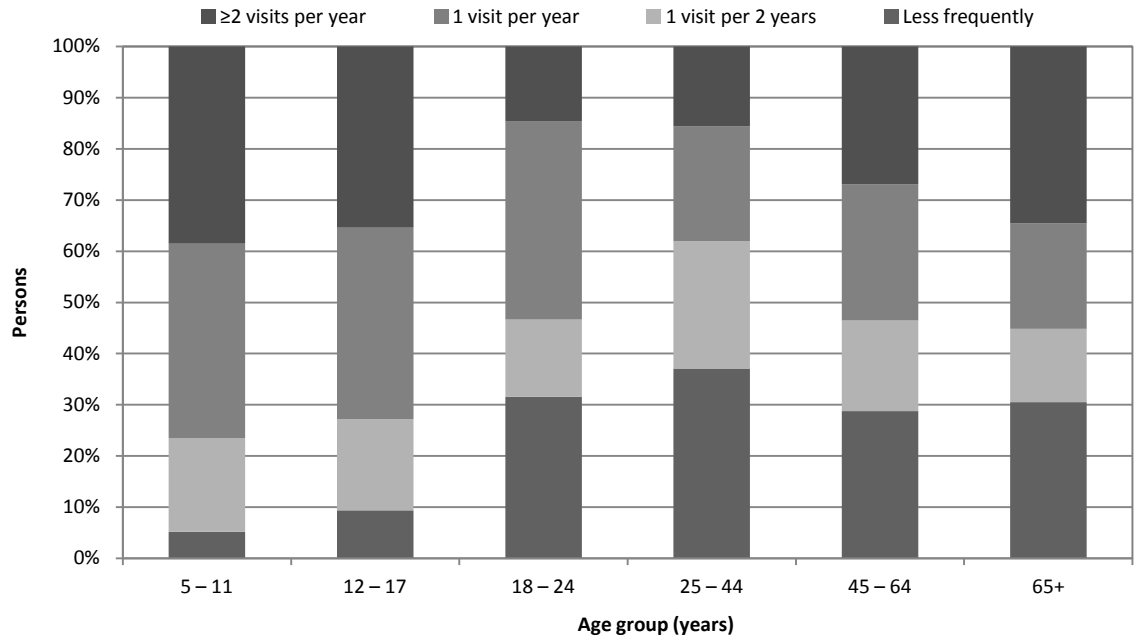

Figure 8.4: Usual frequency of dental visits by age, dentate persons aged 5 years and older

Usual frequency of dental visits (%)	5–11 years	12–17 years	18–24 years	25–44 years	45–64 years	65+ years
≥2 visits per year	38.5	35.4	14.6	15.6	27.0	34.5
1 visit per year	37.9	37.4	38.8	22.4	26.6	20.6
1 visit per 2 years	18.3	17.8	15.1	24.9	17.7	14.3
Less frequently	5.2	9.4	31.6	37.1	28.8	30.5
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: National Dental Telephone Interview Survey, 2008

- In all age groups excepting 25–44-year-olds, the majority of people visited a dentist at least once a year.
- Those aged 25–44 years had the highest percentage (37.1%) among age groups of visiting a dentist less frequently than once every 2 years.
- Nearly all (94.8%) of those aged 5–11 years visited a dentist at least once every 2 years.

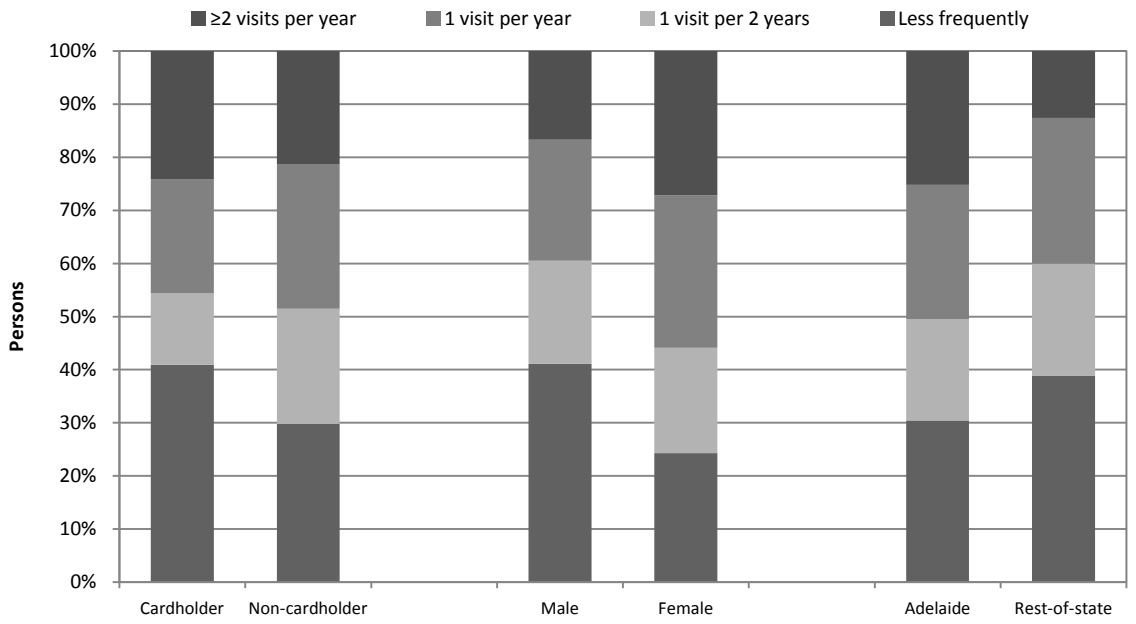

Figure 8.5: Usual frequency of dental visits by cardholder status, sex and region (Adelaide/ rest-of-state), dentate persons aged 18 years and older

	Cardholder status		Sex		Region		
Usual freq. of dental visits (%)	Cardholder	Non-cardholder	Male	Female	Adelaide	Rest-of-state	Total
≥2 visits per year	24.1	21.3	16.7	27.2	25.2	12.6	22.0
1 visit per year	21.5	27.2	22.8	28.7	25.3	27.4	25.8
1 visit per 2 years	13.5	21.7	19.4	19.8	19.1	21.2	19.6
Less frequently	40.9	29.8	41.1	24.3	30.5	38.8	32.6
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: National Dental Telephone Interview Survey, 2008

- A marginally higher percentage of cardholders (24.1%) than non-cardholders (21.3%) usually visited a dentist at least twice a year; however, non-cardholders had a higher percentage of people who usually visited once every 1 or 2 years compared with cardholders (48.9% and 35.0%).
- More than half of females usually made a dental visit at least once a year (55.9%), while only 39.5% of males made a visit this frequently. Almost twice as high a percentage of males (41.1%) as females (24.3%) usually visited less than once every 2 years.
- Adelaide residents had two times as high a percentage (25.2%) as non-Adelaide residents (12.6%) of having usually visited a dentist at least two times a year. Adelaide residents had a lower percentage who usually visited once a year (25.3%) or once every 2 years (19.1%) than non-Adelaide residents (27.4% and 21.2% respectively).

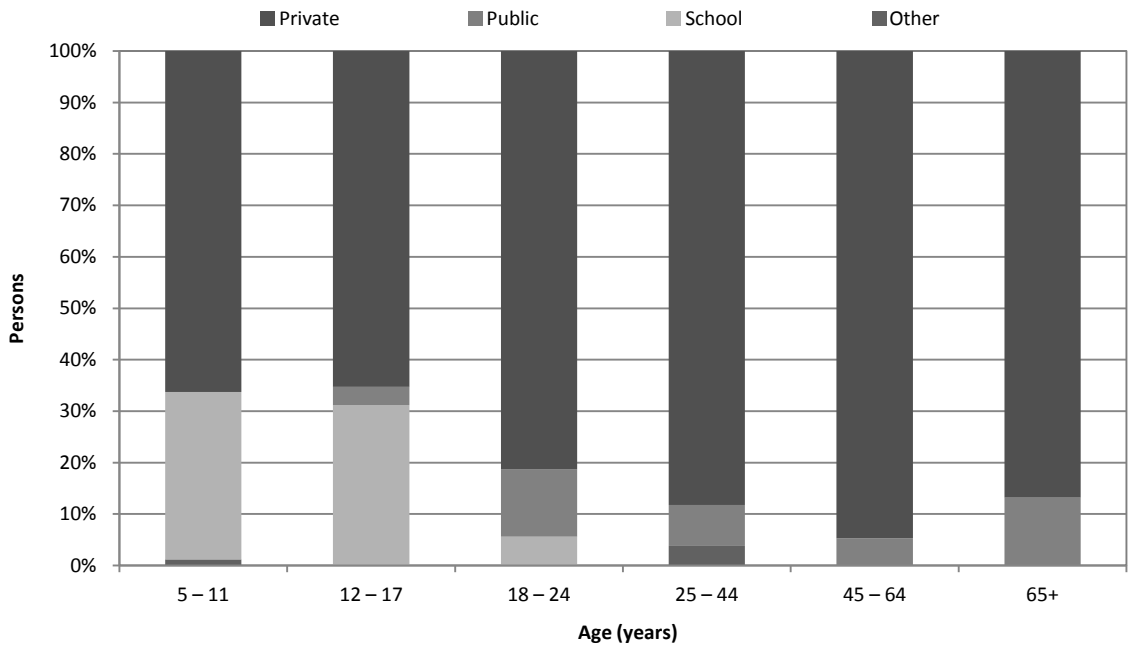

Figure 8.6: Place of last dental visit by age, dentate persons aged 5 years and older who visited in last 12 months

Place of last dental visit (%)	5–11 years	12–17 years	18–24 years	25–44 years	45–64 years	65+ years
Private	66.3	65.3	81.3	88.3	94.7	86.8
Public	0.0	3.5	13.1	8.0	5.3	13.2
School	32.5	31.2	5.6	0.0	0.0	0.0
Other	1.2	0.0	0.0	3.8	0.0	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: National Dental Telephone Interview Survey, 2008

- A large majority in all age groups last visited a dentist at a private practice, as high as 94.7% among 45–64-year-olds.
- Attendance at the School Dental Service for the last dental visit was at 32.5% for 5–11-year-olds, and 31.2% for 12–17-year-olds. A small percentage of 18–24-year-olds (5.6%) reported that their last dental visit was at the School Dental Service.
- The highest percentage of attendees at public dental clinics was for those aged 18–24 years, at 13.1%, and 65+ year olds at 13.2%.

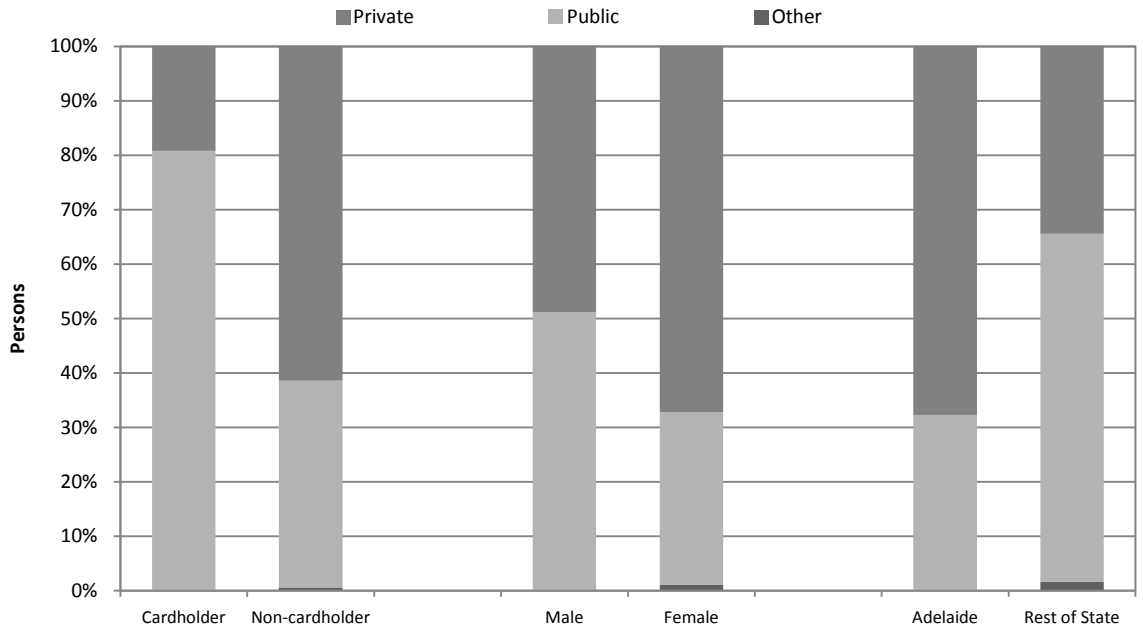

Figure 8.7: Place of last dental visit by cardholder status, sex and region (Adelaide/rest-of-state), dentate persons aged 5 to 17 years who visited in previous 12 months

	Cardholder status		Sex		Region		
Place of last dental visit (%)	**Cardholder**	**Non-cardholder**	**Male**	**Female**	**Adelaide**	**Rest-of-state**	**Total**
Private	19.2	61.4	48.8	67.2	67.7	34.4	57.4
Public	80.9	38.0	51.2	31.7	32.3	63.9	42.1
Other	0.0	0.6	0.0	1.1	0.0	1.7	0.5
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: National Dental Telephone Interview Survey, 2008

- Cardholders had more than double the percentage of non-cardholders who last visited a dentist at a public clinic (38.0% and 80.9%). Among non-cardholders, 61.4% last visited a dentist at a private clinic compared to 19.2% among cardholders.
- About half of males visited a public clinic for their last dental visit (51.2%) and half private (48.8%). Females had around two thirds who last visited a private clinic (67.2%) and one third that attended a public clinic (31.7%).
- Of Adelaide residents, 32.2% last visited a dentist at a public clinic and 67.7% at a private clinic. Non-Adelaide residents had approximately opposite attendance, with 63.9% who last visited a public clinic and 34.4% a private clinic.

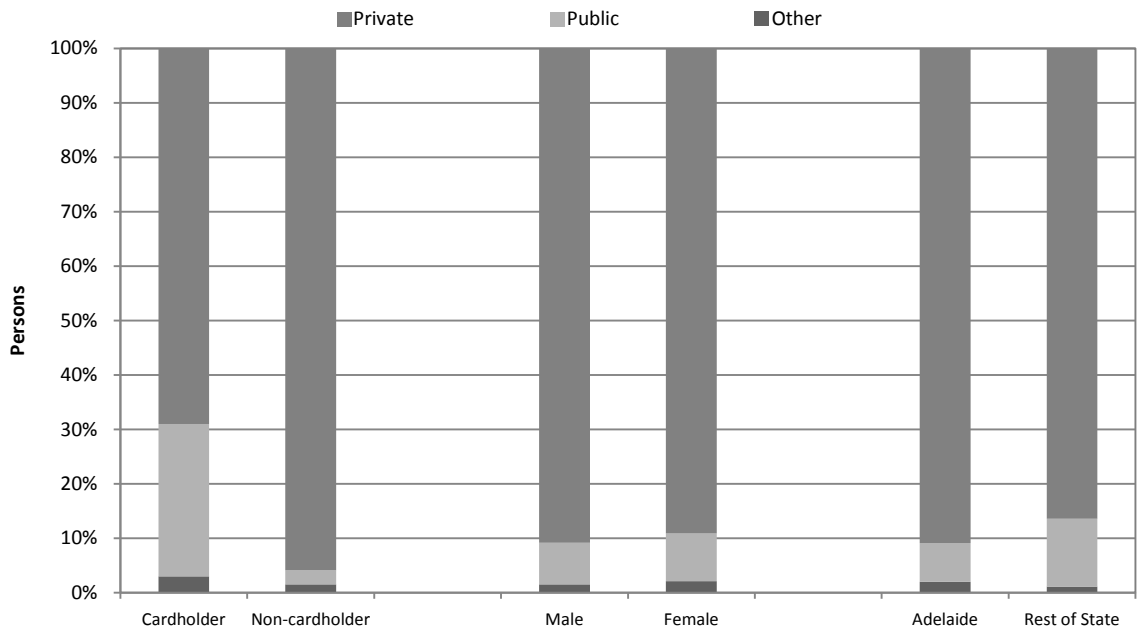

Figure 8.8: Place of last dental visit by cardholder status, sex and region (Adelaide/rest-of-state), dentate persons aged 18 years and older who visited in previous 12 months

	Cardholder status		Sex		Region		
Place of last dental visit (%)	Cardholder	Non-cardholder	Male	Female	Adelaide	Rest-of-state	Total
Private	69.0	95.9	90.8	89.1	90.9	86.4	89.9
Public	28.0	2.6	7.7	8.8	7.1	12.5	8.3
Other	3.0	1.5	1.5	2.1	2.0	1.1	1.8
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: National Dental Telephone Interview Survey, 2008

- Only a very small percentage of non-cardholders last visited a dentist at a public practice (2.6%), with most attending a private practice (95.9%). Cardholders also mainly attended a private practice (69.0%) but had a much higher use of public dental care (28.0%).
- Males and females had very similar percentages attending each type of dental clinic at their last visit.
- Persons living outside Adelaide had a higher percentage (12.5%) receiving public dental care at their last visit than those living in Adelaide (7.1%), but the majority of both groups had last made a dental visit at a private practice (90.9% for Adelaide and 86.4% for the rest-of-state).

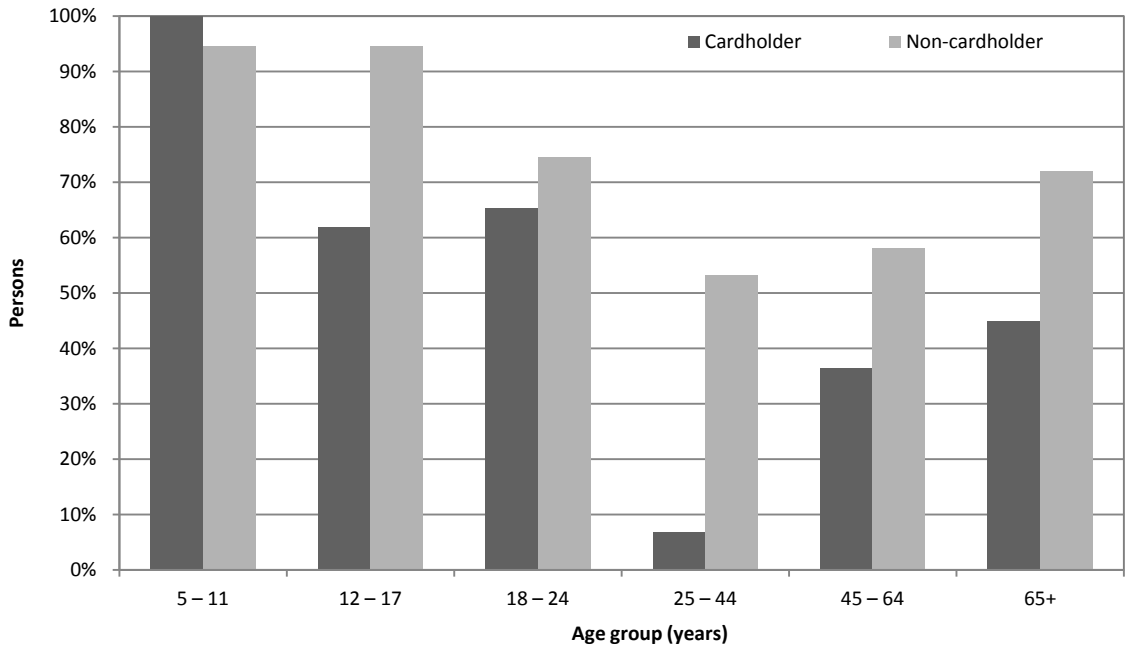

Figure 8.9: Percentage of persons who usually make a dental visit for a check-up by age and cardholder status, dentate persons aged 5 years and older

Usual reason for dental visit was for a check-up (%)	5–11 years	12–17 years	18–24 years	25–44 years	45–64 years	65+ years	Total
Cardholder	100.0	61.9	65.2	6.7	36.4	44.9	37.0
Non-cardholder	94.5	94.5	74.6	53.2	58.1	71.9	66.7
Total	**94.6**	**87.7**	**72.8**	**44.9**	**54.4**	**52.7**	**60.1**

Source: National Dental Telephone Interview Survey, 2008

- Overall, non-cardholders had a higher percentage of people who usually made a dental visit for a check-up than cardholders.

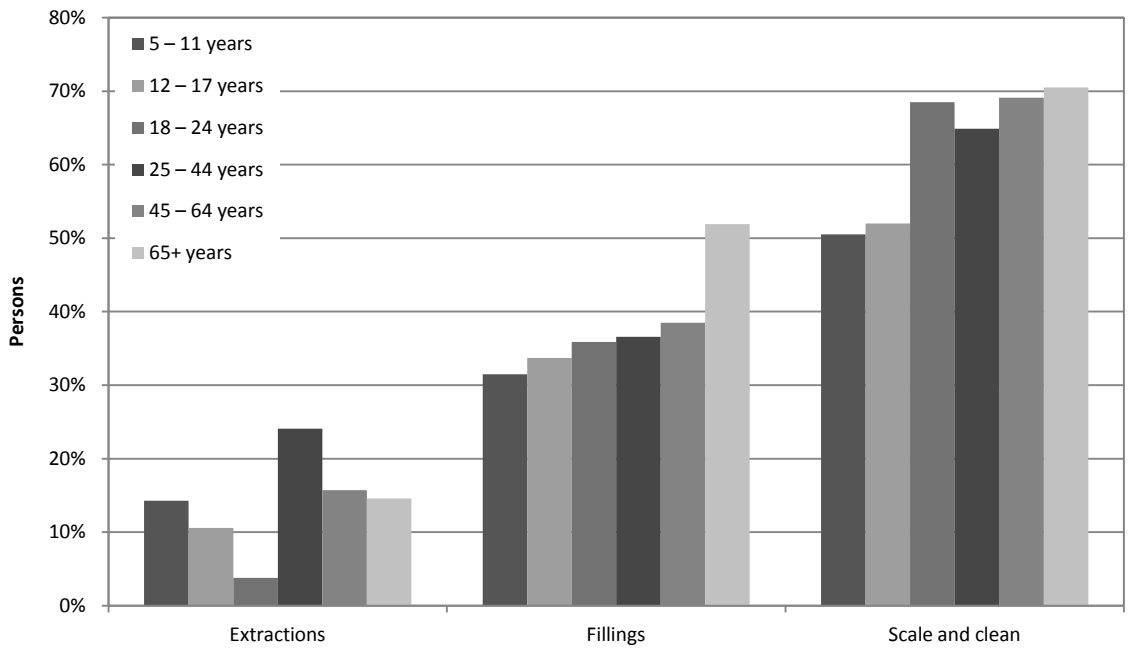

Figure 8.10: Dental services received in last 12 months by age, dentate persons aged 5 years and older who visited in previous 12 months

	Dental services received		
Persons (%)	**Extractions**	**Fillings**	**Scale and clean**
5–11 years	14.3	31.5	50.5
12–17 years	10.6	33.7	52.0
18–24 years	3.8	35.9	68.5
25–44 years	24.1	36.6	64.9
45–64 years	15.7	38.5	69.1
65+ years	14.6	51.9	70.5
Total	**15.4**	**37.8**	**63.7**

Source: National Dental Telephone Interview Survey, 2008

- The percentage of people who received extractions in the previous 12 months fluctuated between age groups. The percentage was lowest for 18–24 year-olds (3.8%) and highest for 25–44-year-olds (24.1%).
- Of 5–11 year-olds, 31.5% received fillings in the previous 12 months. The percentage increased marginally across older age groups before a large increase for those aged 65 years and older, to 51.9%.
- The percentage of people who received a scale and clean in the previous 12 months tended to increase across older age groups despite variations, from 50.8% for ages 5–11 years to 70.5% for those aged 65 years and older.

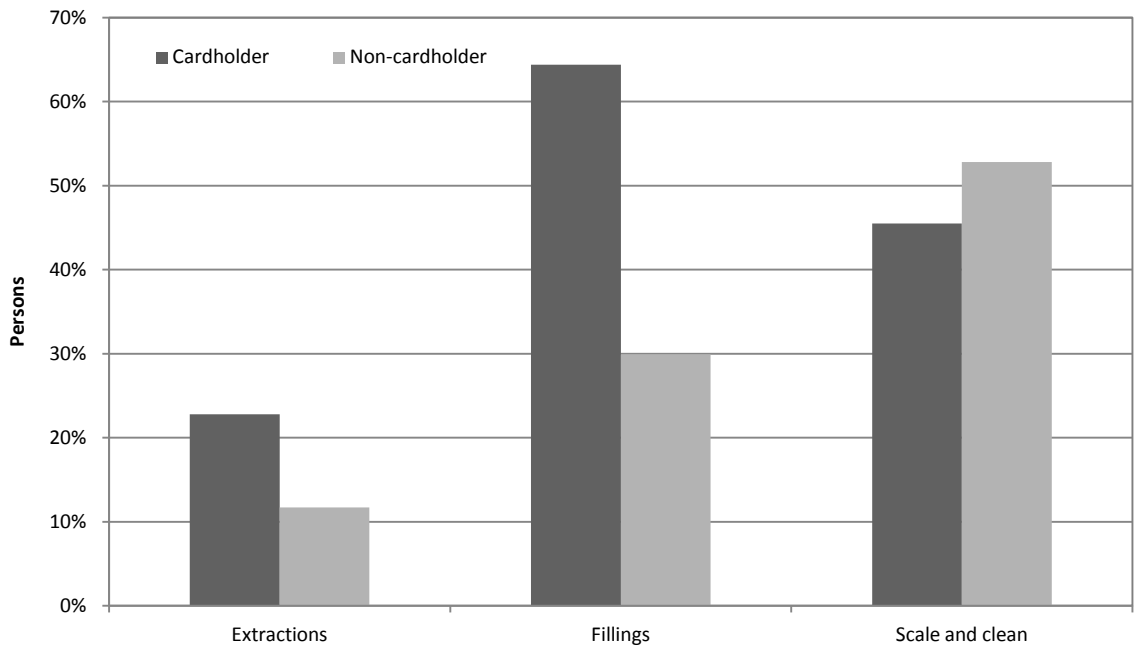

Figure 8.11: Dental services received in previous 12 months by cardholder status, dentate persons aged 5 to 17 years who visited in previous 12 months

	Dental services received		
Persons (%)	**Extractions**	**Fillings**	**Scale and clean**
Cardholder	22.8	64.4	45.5
Non-cardholder	11.7	29.9	52.8
Total	**12.6**	**32.6**	**51.2**

Source: National Dental Telephone Interview Survey, 2008

- Fillings were the most common service received among dentate cardholders, with 64.4% receiving a filling in the previous 12 months. This was more than double the percentage of non-cardholders who received a filling (29.9%).
- Double the percentage of cardholders than non-cardholders received extractions in the previous 12 months (11.7% and 22.8%).
- Among non-cardholders, a scale and clean was the most commonly received service. More than half of non-cardholders received a scale and clean (52.8%) compared with 45.5% of cardholders.

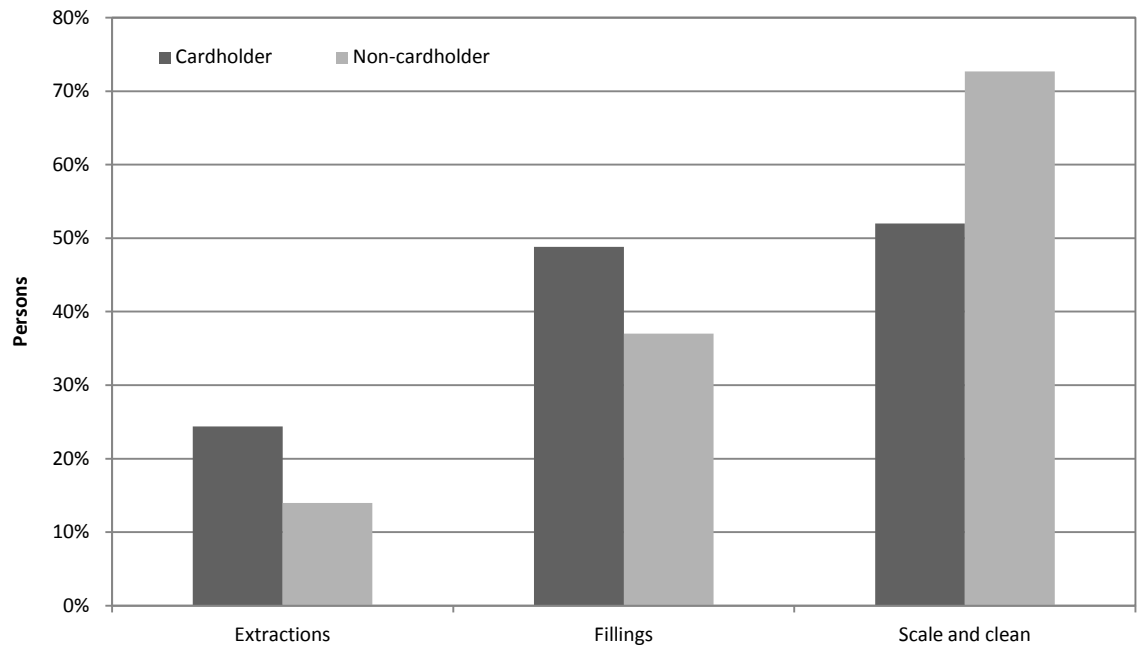

Figure 8.12: Dental services received in previous 12 months by cardholder status, dentate persons aged 18 years and older who visited in previous 12 months

	Dental services received		
Persons (%)	**Extractions**	**Fillings**	**Scale and clean**
Cardholder	24.4	48.8	52.0
Non-cardholder	14.0	37.0	72.5
Total	**16.4**	**39.6**	**68.0**

Source: National Dental Telephone Interview Survey, 2008

- Dentate cardholders had a higher percentage of people who received extractions (24.4%) and fillings (48.8%) than non-cardholders in the previous 12 months (14.0% and 37.0% respectively).
- Of cardholders, about half (52.0%) received a scale and clean in the previous 12 months, compared with a significantly higher 72.5% among non-cardholders.

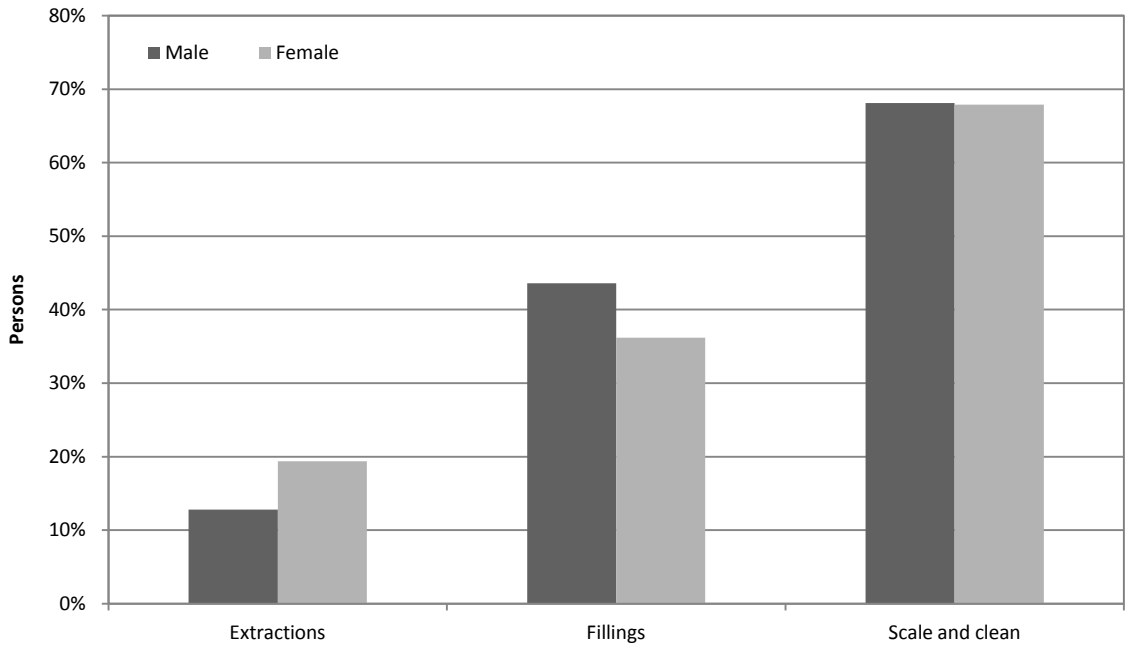

Figure 8.13: Dental services received in previous 12 months by sex, dentate persons aged 18 years and older who visited in previous 12 months

	Dental services received		
Persons (%)	**Extractions**	**Fillings**	**Scale and clean**
Male	12.8	43.6	68.1
Female	19.4	36.2	67.9
Total	**16.4**	**39.6**	**68.0**

Source: National Dental Telephone Interview Survey, 2008

- A higher percentage of dentate females (19.4%) received extractions than dentate males (12.8%) in the previous 12 months.
- In the previous 12 months, fillings were more prevalent among dentate males (43.6%) than females (36.2%).
- Dentate males and females had comparable percentages who received a scale and clean in the previous 12 months.

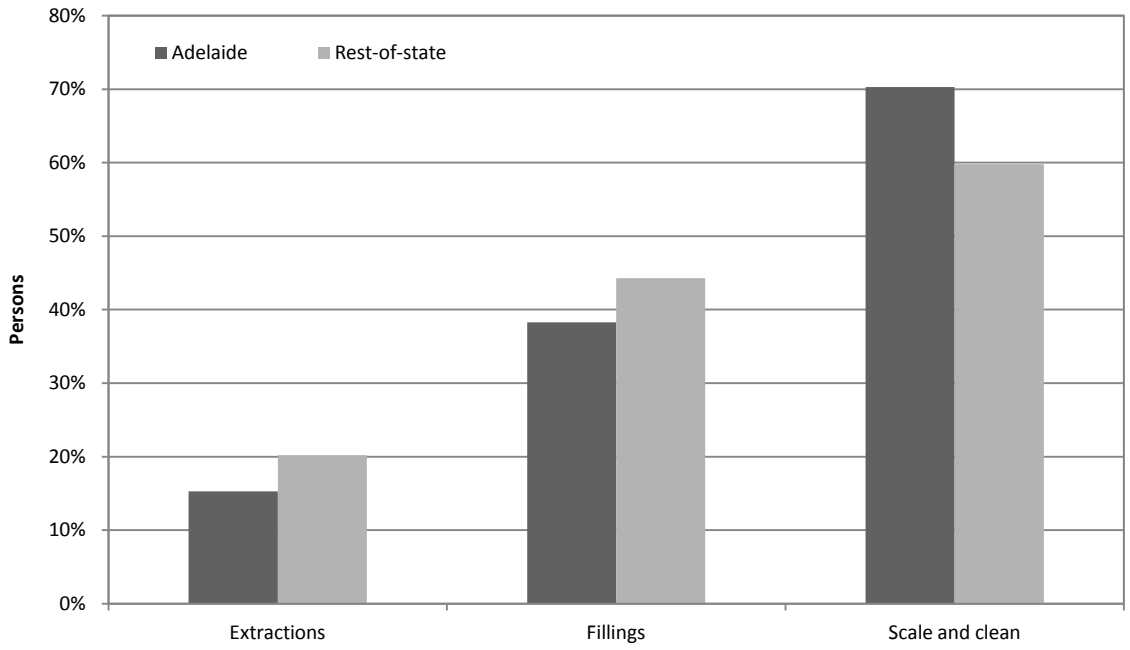

Figure 8.14: Dental services received in previous 12 months by region (Adelaide/rest-of-state), dentate persons aged 18 years and older who visited in previous 12 months

	Dental services received		
Persons (%)	**Extractions**	**Fillings**	**Scale and clean**
Adelaide	15.3	38.3	70.3
Rest-of-state	20.2	44.3	59.8
Total	**16.4**	**39.6**	**68.0**

Source: National Dental Telephone Interview Survey, 2008

- Non-Adelaide residents had a higher percentage of people who had extractions or fillings than Adelaide residents but a lower percentage had received a scale and clean.

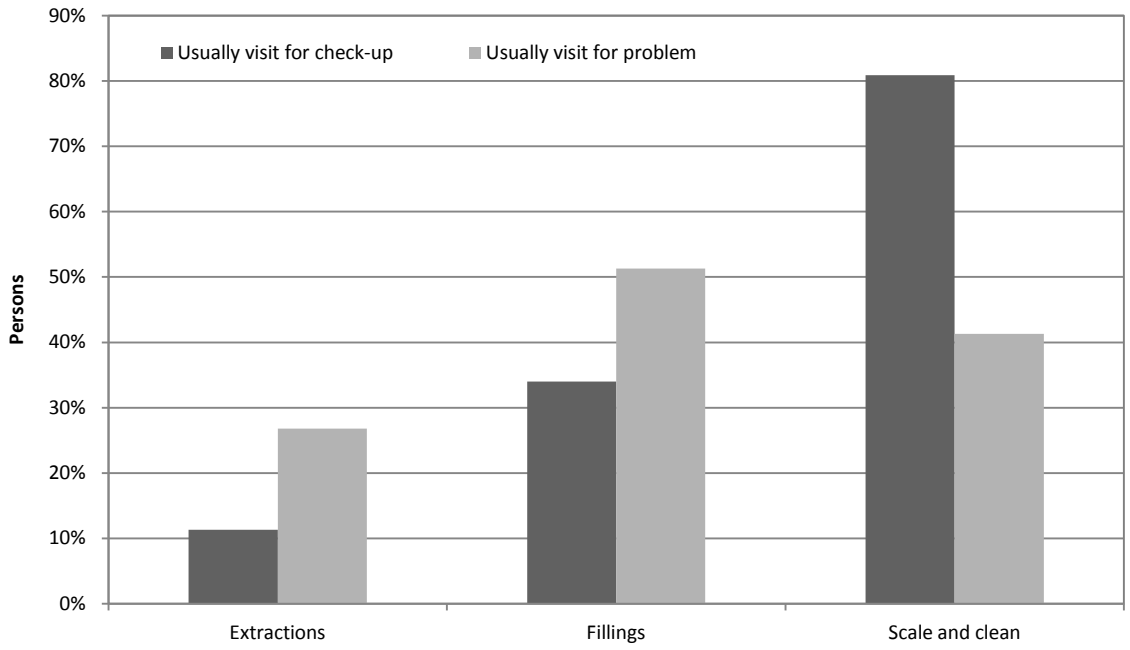

Figure 8.15: Dental services received in previous 12 months by usual reason for dental visit, dentate persons aged 18 years and older who visited in previous 12 months

	Dental services received		
Persons (%)	**Extractions**	**Fillings**	**Scale and clean**
Usually visited for check-up	11.3	34.0	80.9
Usually visited for problem	26.8	51.3	41.3
Total	**16.4**	**39.6**	**68.0**

Source: National Dental Telephone Interview Survey, 2008

- In the previous 12 months, dentate persons who usually visit a dentist for a check-up had significantly lower percentages of people receiving extractions (11.3%) and fillings (34.0%) than those who usually visit for a problem (26.8% for extractions and 51.3% for fillings).
- The percentage of people who received a scale and clean in the previous 12 months was almost twice as high among people who usually visit for a check-up (80.9%) as those who usually visit for a problem (41.3%).

Summary

- The percentage of dentate individuals visiting a dentist in the previous 12 months was significantly higher than the percentage of edentulous people. Among 45–64-year-olds, 68.1% made their last dental visit within the previous 12 months compared with 20.1% of edentulous people. Conversely, 48.3% of edentulous people last visited a dentist 2 or more years ago compared with 21.9% of dentate people. The overall percentages visiting in the previous 12 months were similar among those aged 65 years and older and 45–64-year-olds; however, 70.8% of edentulous individuals had not visited a dentist in the last 2 years, compared with 18.4% among dentate those aged 65 years and older.
- The lowest percentage of dentate people who last visited a dentist in the previous 12 months was among 25–44-year-olds (41.4%). Those aged 18–24 years had the second lowest percentage at 54.0%. The percentage was highest among the two youngest age groups, at 81.7% for 5–11-year-olds and 79.4% for 12–17-year-olds. The opposite was seen for the percentage of people who had last visited a dentist 2 or more years ago, with
  25–44-year-olds the highest at 35.4%, followed by 18–24-year-olds at 27.4%. Among 45–64-year-olds and those aged 65 years and older, the percentages visiting within the previous 2 years were higher than the two preceding age groups but lower than 5–17-year-olds.
- The percentage of dentate non-cardholders who visited a dentist in the previous 12 months (57.0%) was higher than for cardholders (49.6%). A lower percentage (26.1%) of dentate non-cardholders last visited a dentist 2 or more years ago compared with 30.9% of cardholders.
- Dentate females had a higher percentage than males of visiting a dentist within the previous 12 months (59.0% compared with 51.2%). In the previous 2 years, 78.6% of dentate females compared with 66.6% of males visited a dentist. One-third of males had not visited a dentist in the previous 2 years.
- Among dentate non-Adelaide residents, dentate 37.1% had not visited a dentist in the last two years, compared with 23.9% of Adelaide residents.
- Dentate persons aged 18–44 years had the lowest frequency of visiting a dentist. A smaller percentage of 18–24-year-olds than 25–44-year-olds visited at least twice a year (14.6% and 15.6%), but a significantly higher percentage of 18–24-year-olds than 25–44-year-olds visited once a year (38.8% and 22.4%). Children aged 5–11 years had the highest percentage of visiting a dentist at least twice a year (38.5%), followed by 12–17-year-olds (35.4%). Only a small percentage in these age groups visited less frequently than once every 2 years (5.2% of 5–11-year-olds and 9.4% of 12–17-year-olds). Almost 30% of 45–64-year-olds and those aged 65 years and older visited less frequently than once every 2 years.
- A slightly lower percentage of non-cardholders than cardholders visited a dentist at least twice a year (21.3% and 24.1% respectively), while the reverse was true for those visiting once a year (27.2% for non-cardholders and 21.5% for cardholders). There was a 10 percentage point difference between the percentage of non-cardholders (29.8%) compared with cardholders (40.9%) visiting less frequently than once every 2 years.
- A higher percentage of females than males visited a dentist at least twice per year (27.2% for females and 16.7% for males) and once per year (28.7% for females and 22.8% for males). Percentages were comparatively similar between sexes for those who visited

once every 2 years; hence, a higher percentage of males (41.1%) than females (24.3%) visited less frequently than every two years.

- A significantly higher percentage of Adelaide residents visited a dentist at least twice a year (25.2%) compared with non-Adelaide residents (12.6%). Conversely, non-Adelaide residents had a significantly higher percentage (38.8%) than Adelaide residents (30.5%) of visiting less frequently than once every 2 years.
- Two-thirds of children aged 5–17 years attended a private dentist at their last dental visit in the previous 12 months, with the majority of the remainder attending the School Dental Service. A small percentage (5.6%) of 18–24-year-olds last attended the School Dental Service. This is likely to have been those who had turned 18 years of age in the previous 12 months and had made a dental visit before they were no longer eligible for the School Dental Service. The percentage of people attending a public clinic was highest for those aged 65 years and older (13.2%) and 18–24-year-olds (13.1%). Nearly all 45–64-year-olds attended a private practice at their last dental visit (94.7%).
- The majority of cardholders aged 5 – 17 years attended a public clinic at their last dental visit (80.9%). Of non-cardholders, 38.0% visited a public clinic and 61.4% a private clinic. Male 5 – 17-year-olds had fairly equal percentages visiting public and private dental clinics for their last visit (51.2% and 48.8%) while females had a higher percentage who last visited a private clinic (67.2%) than a public clinic (31.7%). Among Adelaide residents, 67.7% attended a private clinic at their last dental visit compared with 34.4% of non-Adelaide residents.
- Among adults ages 18 years and older, a significantly higher percentage of cardholders (28.0%) visited a public clinic at their last dental visit in the previous 12 months compared with non-cardholders (2.6%). There were only slight and non-significant differences between the percentages of males and females visiting private or public dental practices at their last dental visit. A higher percentage of non-Adelaide residents (12.5%) than Adelaide residents (7.1%) visited a public dental clinic at their last visit within the previous 12 months.
- Generally, non-cardholders had a higher percentage than cardholders who usually made a dental visit for a check-up. Cardholders aged 25–44 years had a very low percentage (6.7%) compared with the percentages for all other age and cardholder status groups.
- The percentage of people who received fillings in the previous 12 months increased across older age groups, from 31.5% at ages 5–11 years to 51.9% at ages 65 years and older. The percentage who received a scale and clean tended to increase across older age groups also, up to 70.5% among those aged 65 years and older; however, persons who received extractions showed no such pattern. The prevalence of extractions decreased from 14.3% for ages 5–11 years to 3.8% for 18–24 years, before increasing to 24.1% for ages 25–44 years. The prevalence then declined again to 14.6% for those aged 65 years and older.
- Double the percentage of children aged 5 – 17 years with cardholder status received extractions (22.8%) than non-cardholders (11.7%). The percentage of cardholders who received fillings was more than double that of non-cardholders (64.4% and 29.9%). Just over half of non-cardholders received a scale and clean in the previous 12 months (52.8%) compared with 45.5% of cardholders.

- Non-cardholders aged 18 years and older had a lower prevalence of extractions (14.0%) and fillings (37.0%) than cardholders (24.4% and 48.8% respectively). A significantly higher percentage of non-cardholders had received a scale and clean in the previous 12 months (72.5%) than cardholders (52.0%).
- A similar percentage of males (68.1%) and females (67.9%) received a scale and clean in the previous 12 months. Females had a higher prevalence of extractions (19.4%) than males (12.8%), while the opposite was true for fillings, with 43.6% of males and 36.2% of females having received fillings in the previous 12 months. Neither of these differences was significant.
- Extractions and fillings were more prevalent among non-Adelaide residents than Adelaide residents. Of Adelaide residents, 70.3% received a scale and clean in the previous 12 months compared with 59.8% of non-Adelaide residents.
- Of persons who received a scale and clean in the previous 12 months, those who usually visited a dentist for a check-up had double the percentage (80.9%) receiving this service than those who usually visited for a problem (41.3%). Over half of those who usually visited for a problem received a filling in the previous 12 months compared with 34.0% of those who usually visited for a check-up. The percentage of those who usually visited for a problem who received an extraction in the previous 12 months (26.8%) was more than twice the percentage of those who usually visited for a check-up (11.3%). Each of these differences was significant.

9 Social impact of oral problems

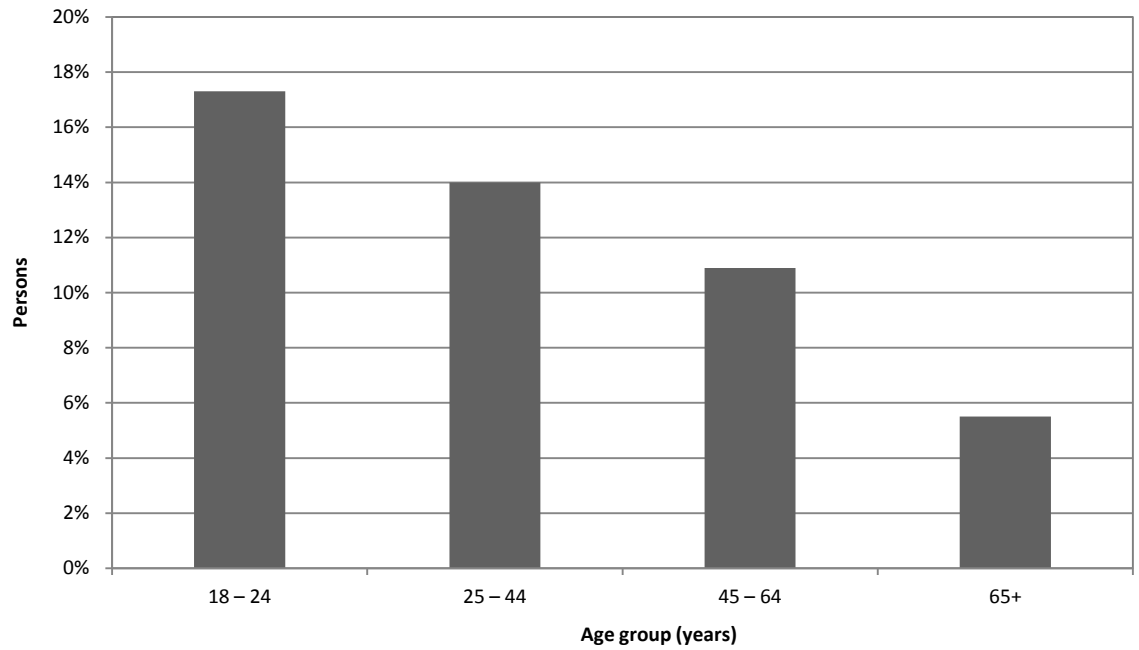

Figure 9.1: Percentage of persons who experienced toothache in previous 12 months by age, dentate persons aged 18 years and older

Persons (%)	18–24 years	25–44 years	45–64 years	65+ years	Total
Experienced toothache	17.3	14.0	10.9	5.5	12.2

Source: National Dental Telephone Interview Survey, 2008

- The experience of toothache was more prevalent among younger people, with 17.3% of dentate 18–24-year-olds reporting toothache experience. The prevalence declined across older age groups to 5.5 among those aged 65 years and older.

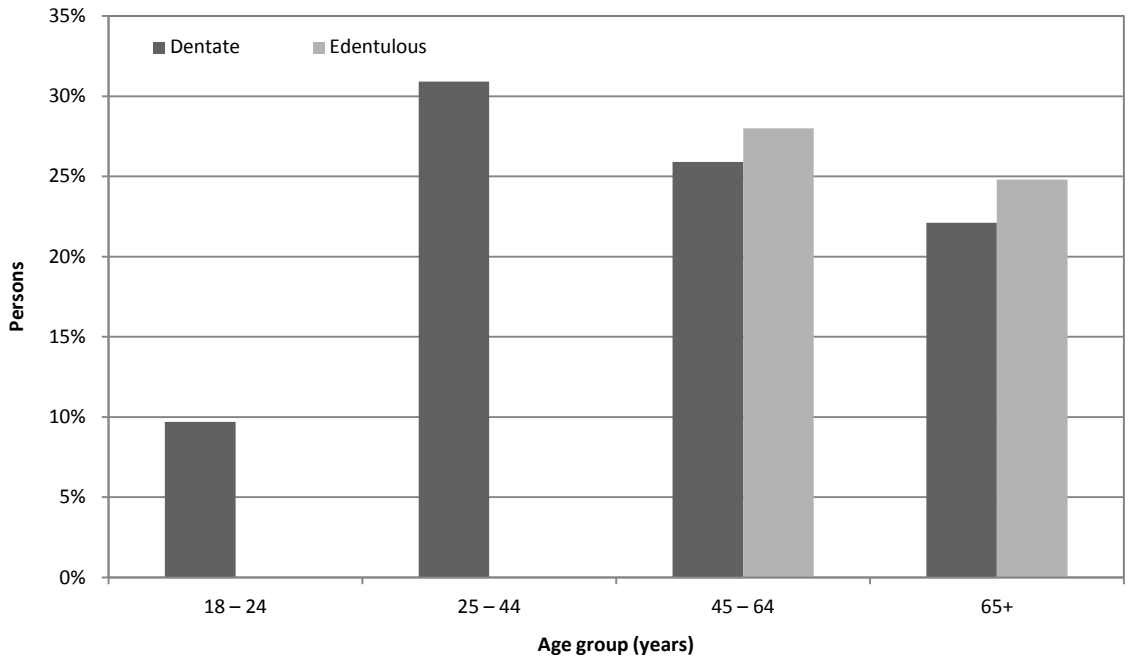

Figure 9.2: Percentage of persons uncomfortable about dental appearance in previous 12 months by age and dentate status, persons aged 18 years and older

Uncomfortable about dental appearance (%)	18–24 years	25–44 years	45–64 years	65+ years	Total
Dentate	9.7	30.9	25.9	22.1	25.3
Edentulous	0.0	0.0	28.0	24.8	25.5

Source: National Dental Telephone Interview Survey, 2008

- Discomfort about dental appearance in the previous 12 months was highest for dentate people in the 25–44 years age group (30.9%) and lowest for 18–24-year-olds (9.7%).
- Those aged 65 years and older felt less discomfort about their dental appearance than 45–64-year-olds. This was true for both dentate and edentulous individuals.
- On average, about one-quarter of all people were uncomfortable about dental appearance in the previous 12 months.

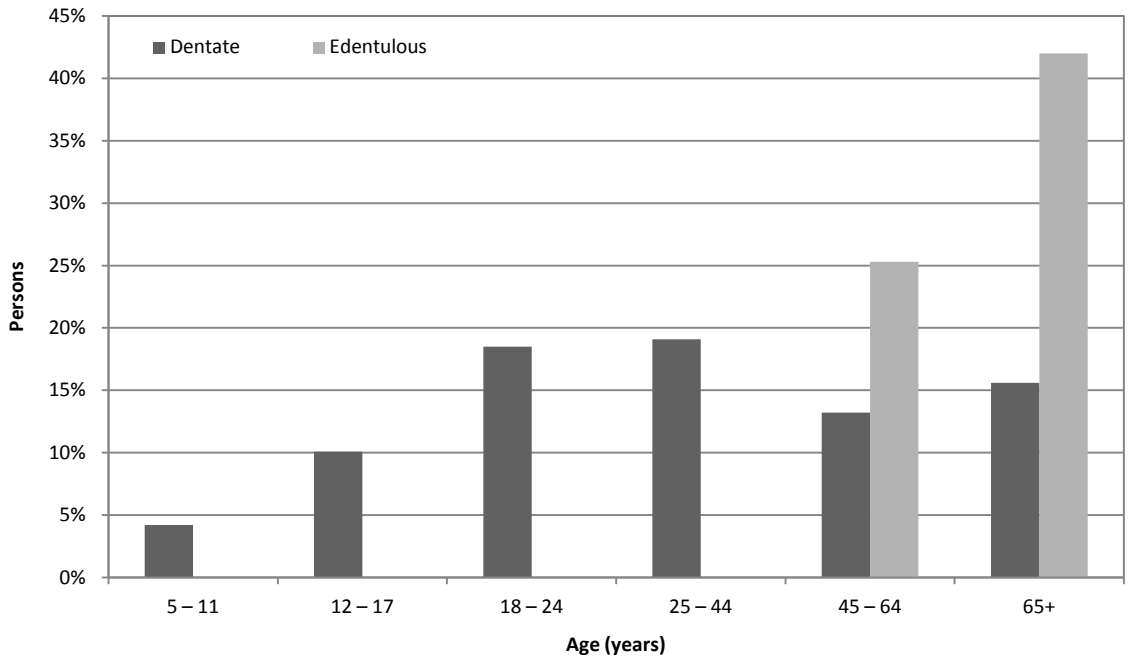

Figure 9.3: Percentage of persons who avoided certain foods in previous 12 months by age and dentate status, persons aged 18 years and older

Avoid certain foods (%)	5 – 11 years	12 – 17 years	18 – 24 years	25 – 44 years	45 – 64 years	65+ years	Total
Dentate	4.2	10.1	18.5	19.1	13.2	15.6	16.5
Edentulous	0.0	0.0	0.0	0.0	25.3	42.0	38.4

Source: National Dental Telephone Interview Survey, 2008

- Overall, a lower percentage of dentate people (16.5%) had avoided certain foods over the previous 12 months than edentulous people (38.4%).
- Among dentate people, avoidance of certain foods increased across age groups until 25 – 44 years of age. Dentate persons aged 45 years or older had a lower percentage than those aged 18 – 44 years who had avoided certain foods.
- Less than 5% of children aged 5 – 11 years avoided foods. The percentage was more than double among children aged 12 – 17 years (10.1%).

Summary

- The prevalence of toothache decreased across older age groups, from 17.3% among 18–24-year-olds to 5.5% among those aged 65 years and older.
- Among those aged 45 years or older, a higher percentage of edentulous than dentate people reported that they were uncomfortable about their dental appearance in the previous 12 months. Reported discomfort with dental appearance was highest among 25–44-year-olds at 30.9% and lowest among 18–24-year-olds at 9.7%.
- Only 4.2% of children aged 5 – 11 years avoided certain foods, while one in ten children aged 12 – 17 years avoided certain foods. Among dentate adults aged 18 years and older, the percentages avoiding certain foods were similar across age groups, ranging from 13.2% among 45–64-year-olds to 19.1% among 25–44-year-olds. Edentulous individuals had a higher prevalence of avoiding certain foods. Among 45–64-year-olds, the percentage was almost twice as high for edentulous (25.3%) as dentate persons (13.2%), and among those aged 65 years and older, the percentage for edentulous persons (42.0%) was almost three times as high as for dentate persons (15.6%).

10 Cost of dental care

Dental insurance

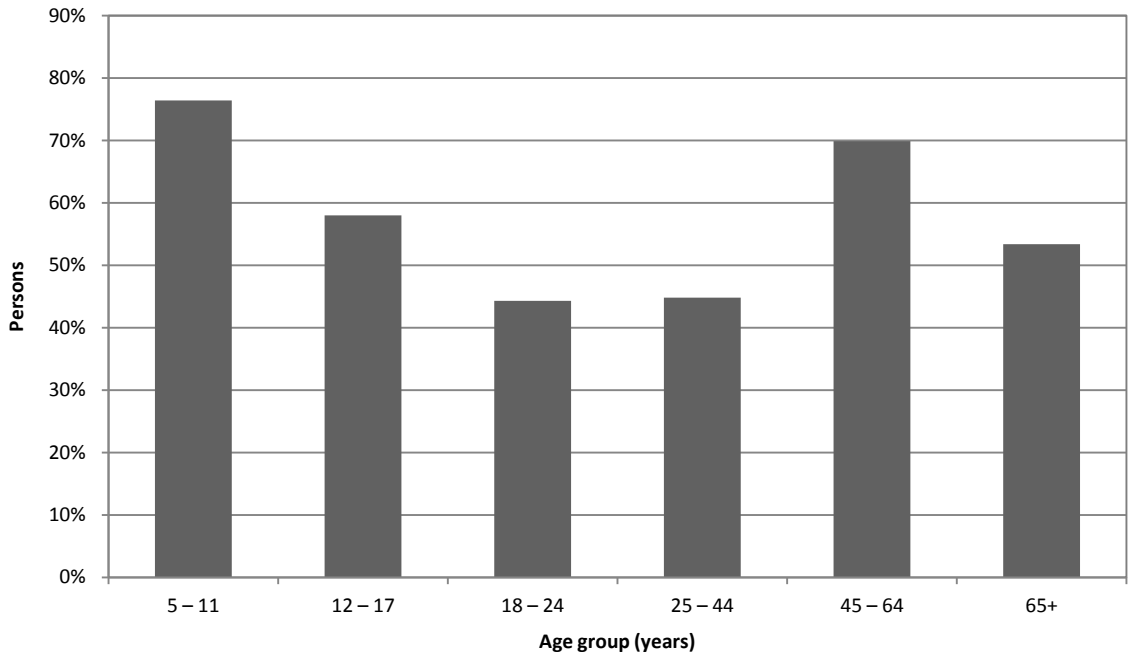

Figure 10.1: Percentage of persons with dental insurance by age, persons aged 5 years and older

Persons (%)	5–11 years	12–17 years	18–24 years	25–44 years	45–64 years	65+ years	Total
With dental insurance	76.4	58.0	44.3	44.8	69.9	53.4	57.2

Source: National Dental Telephone Interview Survey, 2008

- The percentage of people with dental insurance was highest among children aged 5–11 years, at 76.4%. Insurance levels declined to 44.3% among 18–24-year-olds and stayed about the same (44.8%) for 25–44-years-olds, before increasing to 69.9% among 45–64-year-olds. In the 65 years and older age group, the percentage of people with dental insurance again dropped, to 53.4%.

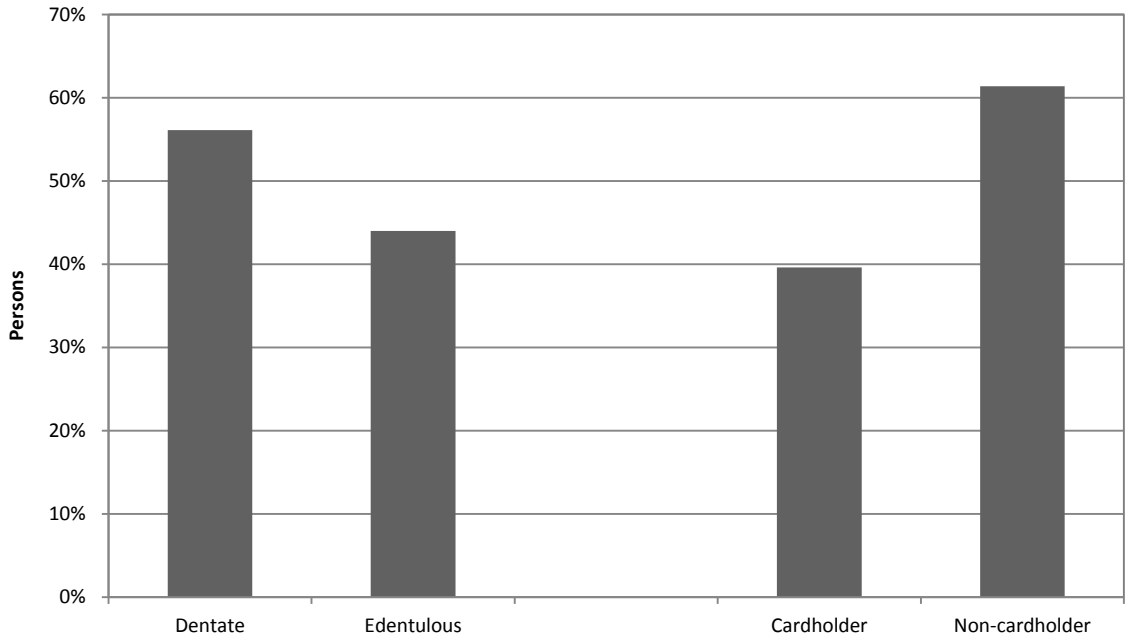

Figure 10.2: Percentage of persons with dental insurance by dentate status and cardholder status, persons aged 18 years and older

	Dentate status		Cardholder status		
Persons (%)	**Dentate**	**Edentulous**	**Cardholder**	**Non-cardholder**	**Total**
With dental insurance	56.1	44.0	39.6	61.4	54.9

Source: National Dental Telephone Interview Survey, 2008

- Of dentate people, 56.1% had dental insurance, compared with 44.0% of edentulous.
- A significantly higher percentage of non-cardholders (61.4%) had dental insurance than did cardholders (39.6%).

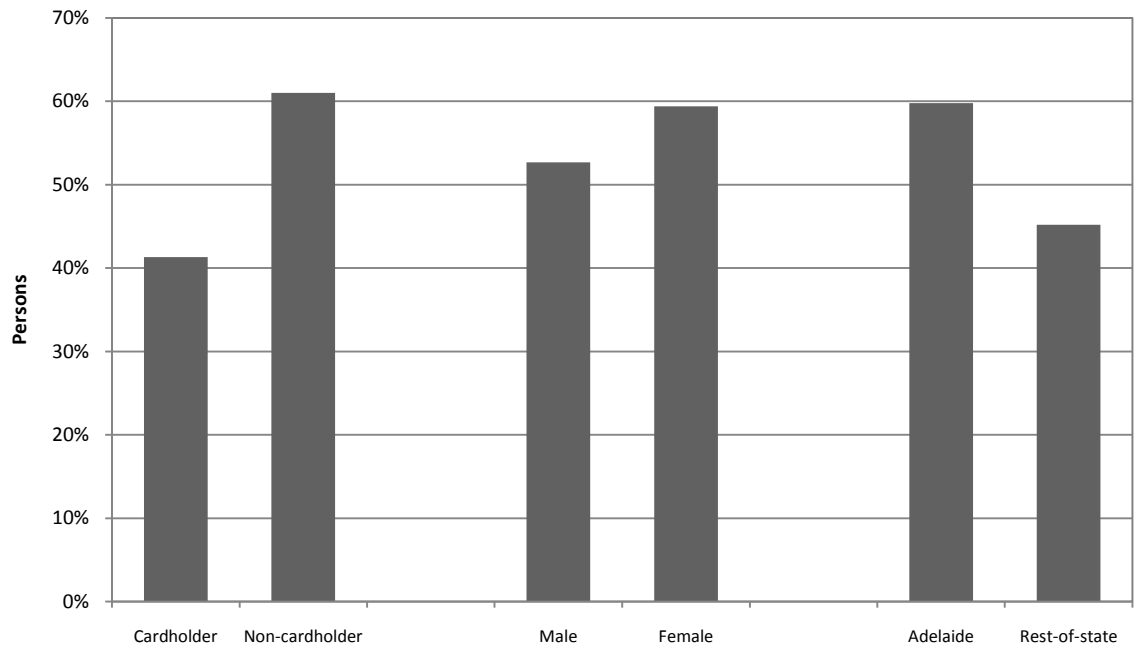

Figure 10.3: Percentage of persons with dental insurance by cardholder status, sex and region (Adelaide/rest-of-state), dentate persons aged 18 years and older

	Cardholder status		Sex		Region		
Persons (%)	Cardholder	Non-cardholder	Male	Female	Adelaide	Rest-of-state	Total
With dental insurance	41.3	61.0	52.7	59.4	59.8	45.2	56.1

Source: National Dental Telephone Interview Survey, 2008

- Dentate cardholders had a lower percentage of people with dental insurance (41.3%) than non-cardholders (61.0%).
- A higher percentage of dentate females (59.4%) than males (52.7%) had dental insurance.
- Dentate people living in Adelaide had a higher percentage with dental insurance (59.8%) than those living outside Adelaide (45.2%).

Cost barriers to accessing dental care

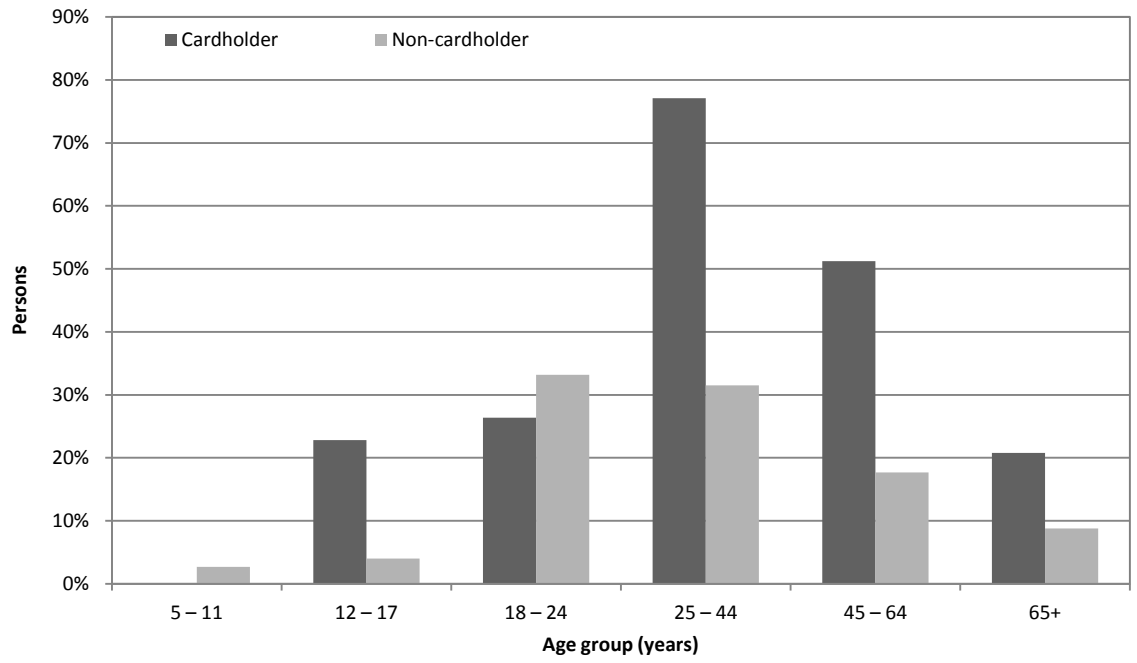

Figure 10.4: Percentage of persons who avoided or delayed visiting dentist due to cost by age and cardholder status, persons aged 5 years and older

Avoided or delayed visiting due to cost (%)	5–11 years	12–17 years	18–24 years	25–44 years	45–64 years	65+ years	Total
Cardholder	0.0	22.8	26.4	77.1	51.2	20.8	37.9
Non-cardholder	2.7	4.0	33.2	31.5	17.7	8.8	20.3
Total	**2.7**	**7.9**	**32.0**	**39.8**	**23.5**	**18.0**	**24.9**

Source: National Dental Telephone Interview Survey, 2008

- A high percentage (77.1%) of cardholders aged 25–44 years had avoided or delayed a dental visit due to cost. This was in contrast with 31.5% of non-cardholders, and was significantly higher than in other age groups, whether cardholder or non-cardholder.
- Among those aged 25 years or older, cardholders had consistently higher percentages of people reporting that they had avoided or delayed visiting a dentist due to cost than non-cardholders.

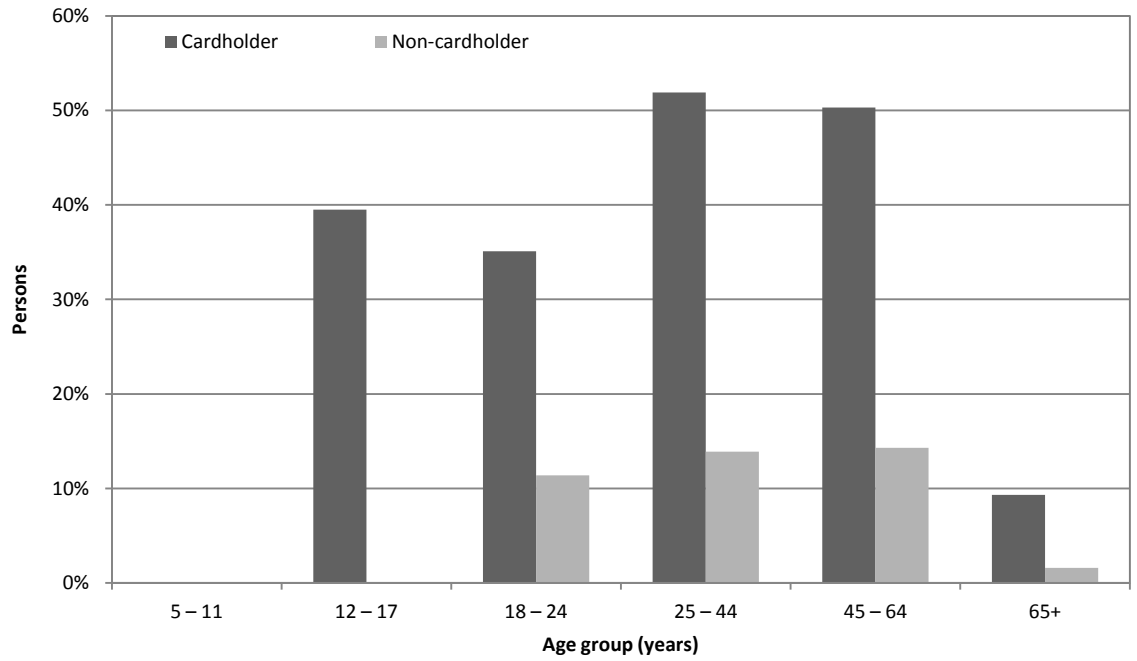

Figure 10.5: Percentage of persons stating cost prevented recommended dental treatment by age and cardholder status, persons aged 5 years and older

Avoided/prevented recommended treatment (%)	5–11 years	12–17 years	18–24 years	25–44 years	45–64 years	65+ years	Total
Cardholder	0.0	39.5	35.1	51.9	50.3	9.3	29.2
Non-cardholder	0.0	0.0	11.4	13.9	14.3	1.6	9.3
Total	**0.0**	**7.2**	**15.6**	**18.7**	**19.5**	**6.9**	**13.3**

Source: National Dental Telephone Interview Survey, 2008

- The percentage of people stating that cost had prevented them from getting recommended dental treatment was 39.5% for cardholders aged 12–17 years and 35.1% for cardholders aged 18–24 years; however, the percentage increased to over half of cardholders aged 25–44 years (51.9%) and 45–64 years (50.3%).
- In comparison, 11.4% of 18–24-year-old non-cardholders reported that cost had prevented recommended dental treatment, increasing slightly across older age groups to 14.3% for those aged 45–64 years. Only 1.6% of those aged 65 years and older felt that cost had prevented recommended dental treatment.

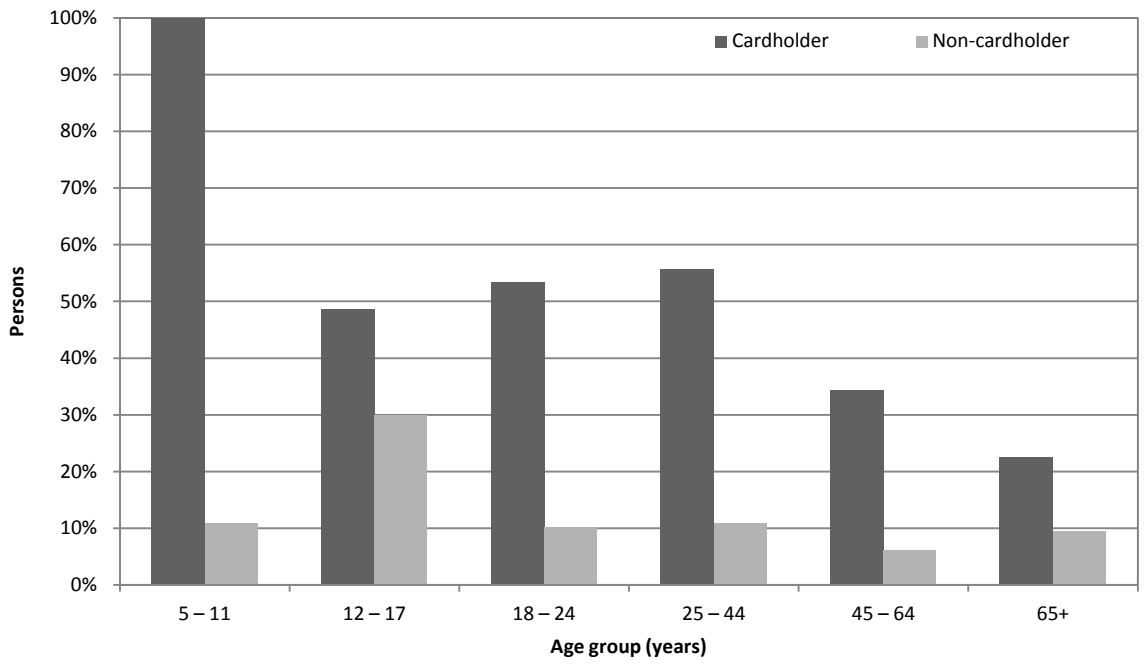

Figure 10.6: Percentage of persons who would have a lot of difficulty paying $100 dental bill by age and cardholder status, persons aged 5 years and older

A lot of difficulty paying $100 dental bill (%)	5–11 years	12–17 years	18–24 years	25–44 years	45–64 years	65+ years	Total
Cardholder	100.0	48.6	53.4	55.7	34.4	22.5	35.6
Non-cardholder	10.8	29.8	10.1	10.9	6.1	9.5	10.9
Total	**11.9**	**33.8**	**18.4**	**19.0**	**11.0**	**19.6**	**17.4**

Source: National Dental Telephone Interview Survey, 2008

- Among non-cardholders, around 10% in each age group reported that they would have a lot of difficulty paying a $100 dental bill, except for those aged 12–17 years, where reporting increased to 29.8%.
- Cardholders consistently reported difficulty paying a $100 dentist bill more frequently than non-cardholders. The percentage reporting difficulty was higher among younger age groups up to ages 25–44 years (55.7%). The percentage of people reporting difficulty paying a $100 dental bill then decreased to 22.5% among those aged 65 years and older.

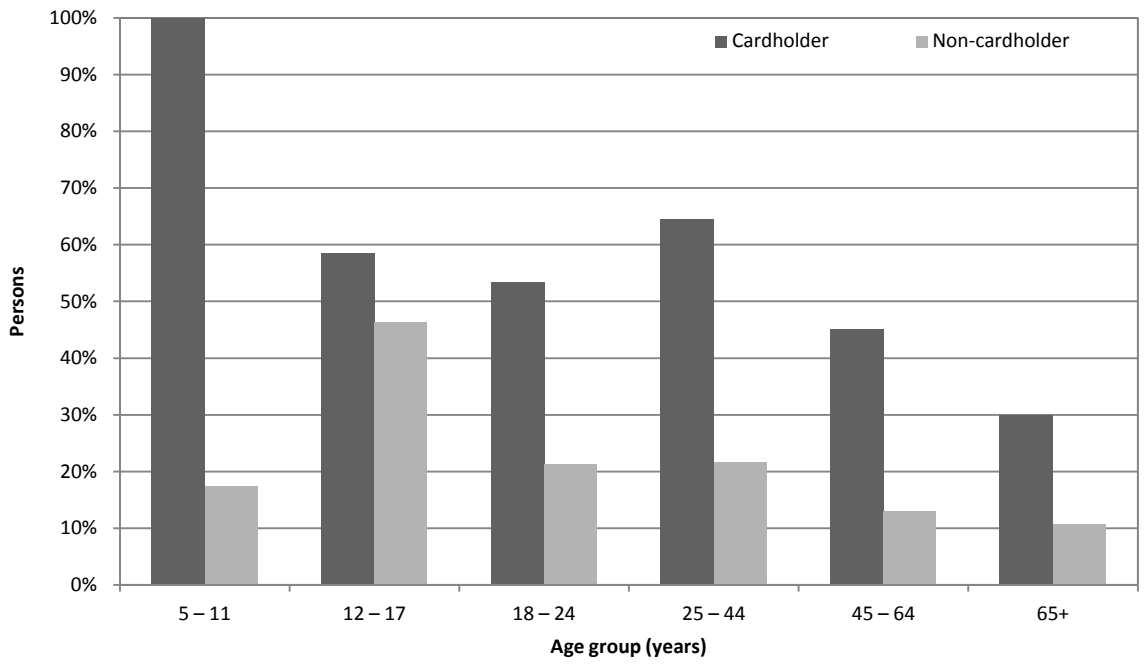

Figure 10.7: Percentage of persons who would have a lot of difficulty paying $150 dental bill by age and cardholder status, persons aged 5 years and older

A lot of difficulty paying $150 dental bill (%)	5–11 years	12–17 years	18–24 years	25–44 years	45–64 years	65+ years	Total
Cardholder	100.0	58.5	53.4	64.4	45.0	29.9	43.4
Non-cardholder	17.3	46.3	21.2	21.6	12.9	10.6	20.0
Total	**18.4**	**48.9**	**27.4**	**29.3**	**18.4**	**25.5**	**26.1**

Source: National Dental Telephone Interview Survey, 2008

- At least half of cardholders aged 5–44 years reported that they would have a lot of difficulty paying a $150 dental bill. The percentage of people reporting this then decreased to 29.9% among those aged 65 years and older.
- The percentage among non-cardholders who reported that they would have a lot of difficulty paying a $150 dental bill was lower than for cardholders in all age groups. Among 12–17-year-olds, 46.3% of people reported a difficulty, and among those aged 65 years and older only 10.6% reported a difficulty.

Expenditure on dental services

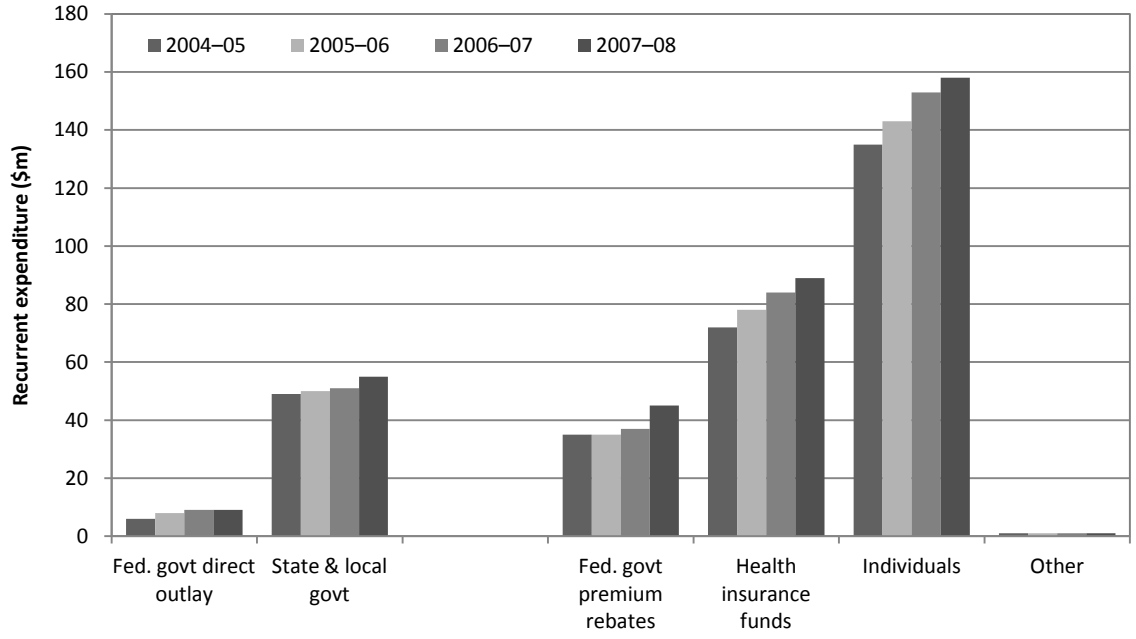

Figure 10.8: Recurrent expenditure on dental services, current prices, by source of funds in South Australia for years 2004–05, 2005–06, 2006–07 and 2007–08

Expenditure ($ million)	Federal govt direct outlay	State and local government	Federal govt premium rebates	Health insurance funds	Individuals	Other	Total
2004–05	6	49	35	72	135	1	298
2005–06	8	50	35	78	143	1	315
2006–07	9	51	37	84	153	1	335
2007–08	9	55	45	89	158	1	357

Source: AIHW Health Expenditure Database—AIHW

- Total expenditure on dental services in South Australia was $298 million in 2004–05, increasing to $357 million in 2007–08. Total expenditure increased by 6.6% from 2006–07 to 2007–08, compared with 5.7% from 2004–05 to 2005–06 and 6.3% from 2005–06 to 2006–07.
- Individuals paid directly out-of-pocket for around 45% and via health insurance funds for a further 25% of dental expenditure each year.
- It should be noted that 'federal government premium rebates' refers to the 30% rebate provided to residents with private health insurance.

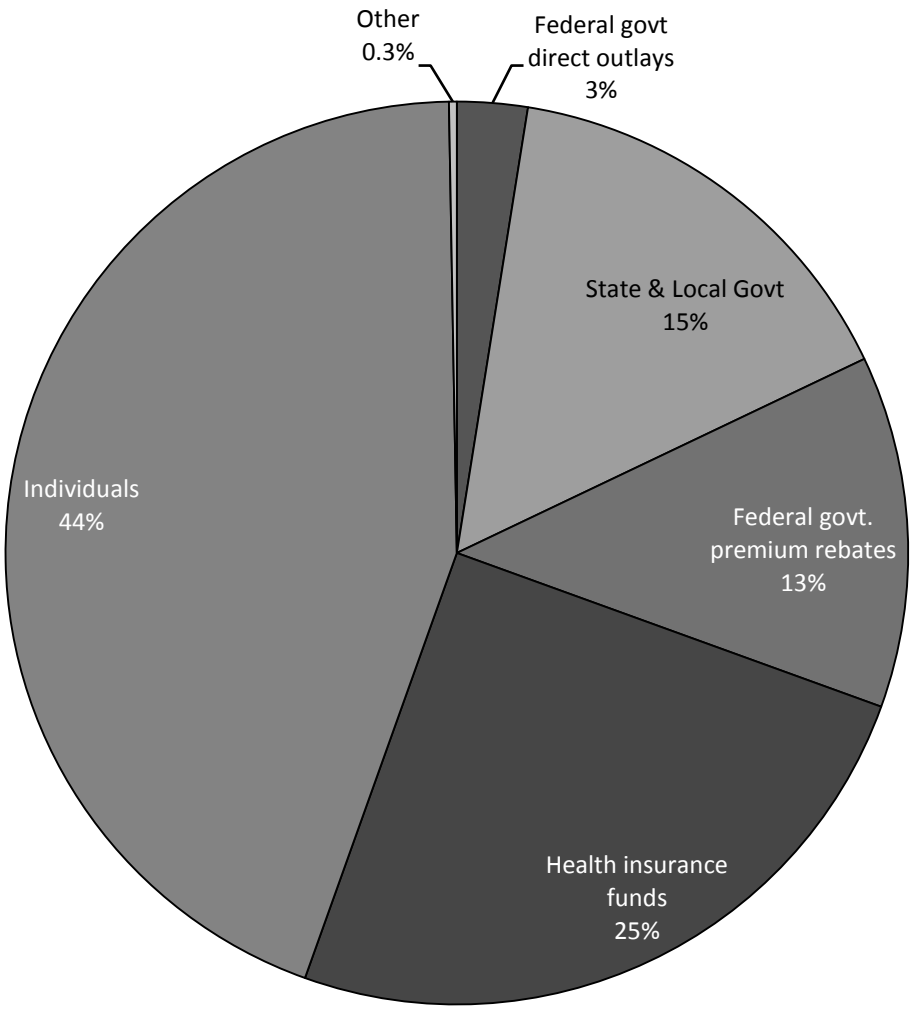

Figure 10.9: Contribution of government and private funding sources to total dental expenditure for year 2007–08

Contribution to dental expenditure (%)	Source of funds						
	Federal govt direct outlay	State and local government	Federal govt premium rebates	Health insurance funds	Individuals	Other	Total
2007–08	2.5	15.4	12.6	24.9	44.3	0.3	100.0

Source: AIHW Health Expenditure Database—AIHW

- Individuals were the largest source of funds for total dental expenditure, paying directly out-of-pocket 44.3% of dental costs, followed by a further 24.9% via health insurance.
- Federal government direct outlay and state and local government together contributed 17.9% of total dental expenditure in 2007–08.

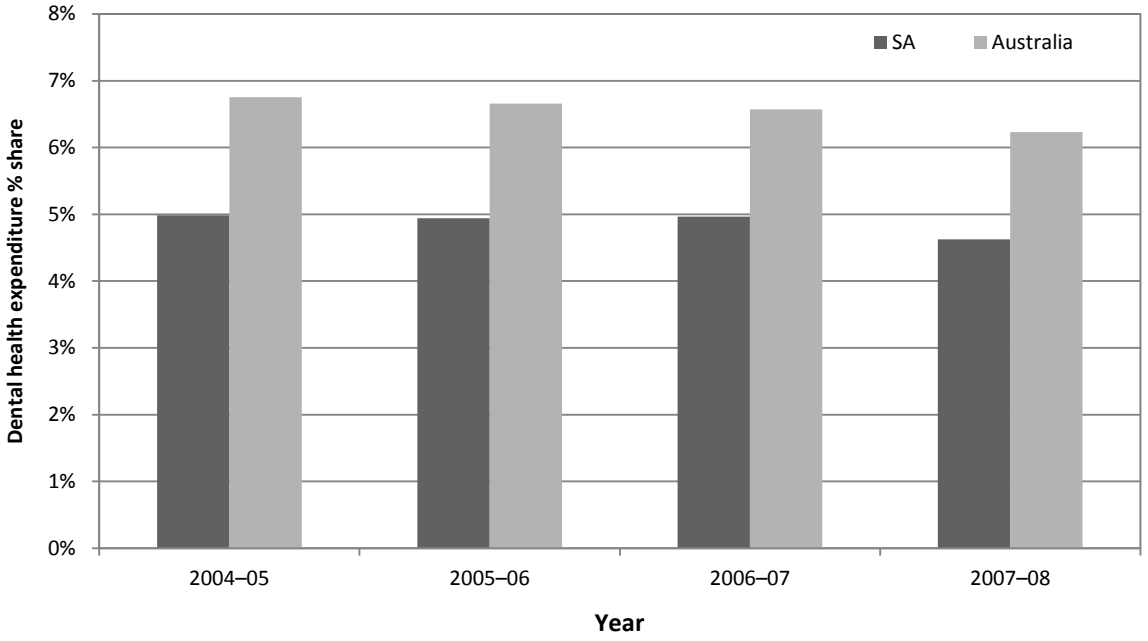

Figure 10.10: Expenditure on dental health as a percentage of total recurrent health expenditure for years 2004–05, 2005–06, 2006–07 and 2007–08

	2004–05	2005–06	2006–07	2007–08
South Australia				
Dental health expenditure ($m)	298	315	335	357
Total health expenditure ($m)	5,978	6,446	6,882	7,718
% of health expenditure	5.0	4.9	4.9	4.6
Australia				
% of health expenditure	6.8	6.6	6.4	6.2

Source: AIHW Health Expenditure Database—AIHW

- In South Australia dental expenditure has accounted for less of all health expenditure than in Australia overall for all years from 2004–05 to 2007–08.
- In 2004–05, 5.0% of all health expenditure was spent on dental health in South Australia and 6.8% in Australia. The percentage of health expenditure spent on dental health has decreased to 4.6% in South Australia and 6.2% in Australia.

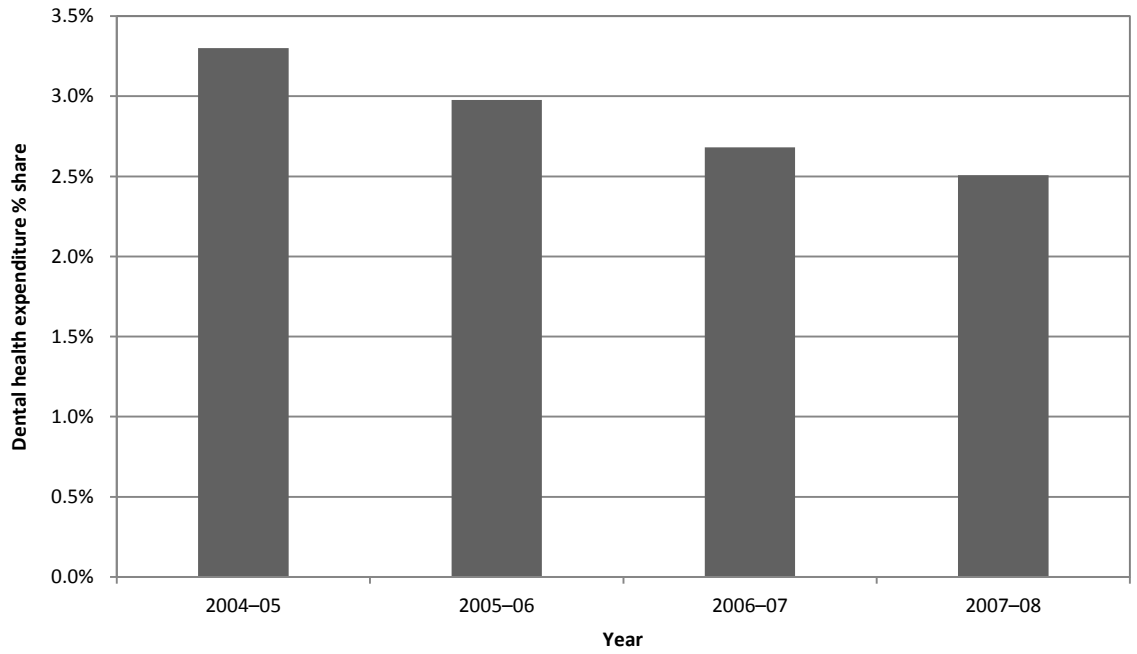

Figure 10.11: State and local government expenditure on dental health as a percentage of total recurrent health expenditure for years 2004–05, 2005–06, 2006–07 and 2007–08

State and local govt expenditure	2004–05	2005–06	2006–07	2007–08
Dental health expenditure ($m)	49	50	51	55
Total health expenditure ($m)	1485	1680	1903	2194
% of health expenditure	3.3	3.0	2.7	2.5

Source: AIHW Health Expenditure Database—AIHW

- Dollar-value expenditure by state and local government on dental health has increased from $49 million in 2004–05 to $55 million in 2007–08. Despite this increase, the percentage of all health expenditure accounted for by state and local government expenditure on dental health has decreased from 3.3% in 2004–05 to 2.5% in 2007–08. This reflects the general decrease in dental expenditure as a percentage of all health expenditure, as seen in the previous Figure 10.10.

Summary

Dental insurance

- The percentage of people with dental insurance was highest (76.4%) for 5–11-year-olds. The percentage with coverage decreased to 44.3% for 18–24-year-olds and 44.8% for 25–44-year-olds, before increasing to 69.9% for those aged 45–64 years. More than half of persons aged 65 years and older had dental insurance.
- A higher percentage of dentate (56.1%) than edentulous (44.0%) people had dental insurance.
- Non-cardholders (61.4%) had a significantly greater percentage than cardholders (39.6%) who were covered with dental insurance.
- Among dentate persons, 41.3% of cardholders compared with 61.0% of non-cardholders had dental insurance. A higher percentage of females (59.4%) than males (52.7%) were insured. A significantly greater percentage of Adelaide residents (59.8%) had dental insurance than non-Adelaide residents (45.2%).

Cost barriers

- The sample of cardholders aged 5–11 years was very small and therefore may be unrepresentative of the population. While data are still included in tables and figures for this sub-group of the population, it is not discussed in the following paragraphs.
- The percentage of cardholders who reported that they had avoided or delayed a dental visit due to cost was 22.8% among 12–17-year-olds and 26.4% among 18–24-year-olds. A large percentage of 25–44-year-old cardholders (77.1%) had avoided or delayed visiting a dentist because of the cost. This percentage was significantly higher than among any of the other age and cardholder status groups. The percentage decreased among cardholders over the age of 44 years, to 20.8% among those aged 65 years and older. Non-cardholders reported avoiding or delaying a dental appointment less frequently than did cardholders. The only age group in which this was not true was 18–24 year-olds, where 33.2% of non-cardholders had avoided or delayed a dental visit, although the difference was not significant. This was the highest percentage among non-cardholders, increasing from 2.7% for 5–11-year-olds, and decreasing to 8.8% for those aged 65 years and older.
- No non-cardholders under the age of 18 years reported that cost had prevented them from receiving recommended dental treatment. Non-cardholders aged 45–64 years had the highest percentage (14.3%). Among cardholders, the highest percentage prevented from recommended dental treatment by cost was recorded for those aged 25–44 years (51.9%). The lowest percentage was among those aged 65 years and older, where less than 10% reported that cost had prevented recommended dental treatment. The second lowest percentage was 35.1% among 18–24-year-olds.
- The percentage of non-cardholders who reported that they would have a lot of difficulty paying a $100 dental bill was less than 11% for most age groups. The lowest percentage was 6.1% among 45–64-year-olds. Those aged 12–17 years had a significantly higher percentage (29.8%) who reported that they would have difficulty. Percentages were higher among cardholders in all age groups, rising from 48.6% for ages 12–17 years to

55.7% for ages 25.44 years. The percentage then decreased to 35.6% among those aged 65 years and older.

- Among cardholders, over 50% of those aged 12–24 years and over 60% of those aged 25–44 years reported that they would have a lot of difficulty paying a $150 dental bill. The percentage of cardholders reporting a difficulty decreased to 29.9% among those aged 65 years and older. Non-cardholders had smaller percentages reporting a difficulty in all age groups than cardholders. The percentage rose from 17.3% among 5–11-year-olds to peak at 46.3% for 12–17-year-olds. The smallest percentage was among those aged 65 years and older (10.6%).

Dental expenditure

- The average increase in total recurrent expenditure on dental services was 6.2% per annum. Each source of funds increased recurrent expenditure on dental services every year from 2004–05 to 2007–08. Individual direct out-of-pocket expenditure increased by 17%, from $135million in 2004–05 to $158million in 2007–08. Between 2004–05 and 2007–08, individual expenditure via health insurance funds increased by 24%, from $72million to $89million, and federal government premium rebates increased by 18%, from $35million to $45million. Health insurance funds expenditure and federal government premium rebates, however, only benefit those with private dental insurance, which is less than 60% of the population.
- In 2007–08 individuals directly paid 44.3% of total dental expenditure. Individual expenditure via health insurance funds accounted for 24.9% of expenditure and federal government premium rebates for 12.6%. Less than 60% of the population benefited from more than one-third (37.5%) of total expenditure towards dental services in 2007–08. State and local government combined with federal government direct outlays contributed 17.9% of total dental expenditure.
- South Australia was below the national average of expenditure on dental services as a percentage of overall recurrent health expenditure between 2004–05 and 2007–08. In 2007–08 South Australia contributed 4.6% of total health expenditure to dental services compared with 6.2% nationally. Between 2004–05 and 2007–08 the proportional contribution to dental services decreased in both South Australia and nationally. The decrease, however, was to a lesser extent in South Australia (8%) than nationally (9%).
- State and local government contributions to dental services as a percentage of overall recurrent health expenditure decreased between 2004–05 (3.3%) and 2007–08 (2.5%). Expenditure by state and local government on dental services increased over the 4-year period by an annual average of 3.9%. In comparison, overall health expenditure increased by an average of 13.9%.

11 Dental labour force

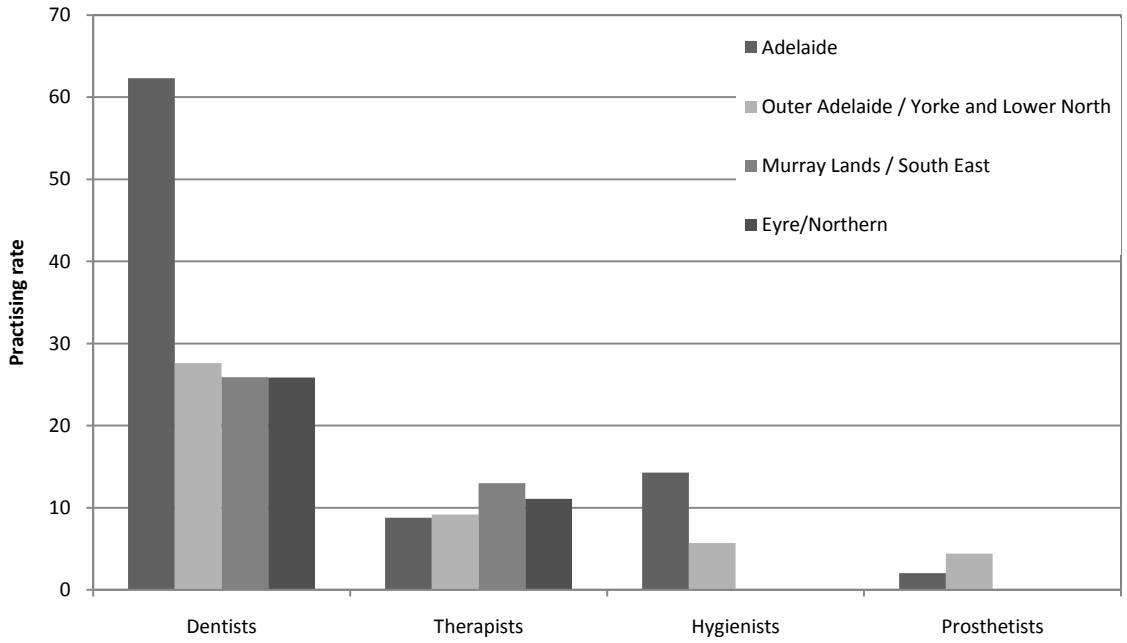

Figure 11.1: Practising dentists/therapists/hygienists/prosthetists per 100,000 population by statistical division, 2006

Number practising per 100,000 population	Dentists	Therapists	Hygienists	Prosthetists
Adelaide	62.3	8.8	14.3	2.0
Total rest-of-state:	26.6	10.9	3.8	1.5
Outer Adelaide / Yorke and Lower North	27.6	9.2	5.7	4.4
Murray Lands / South East	25.9	13.0	n.p.	—
Eyre / Northern	25.9	11.1	n.p.	—
South Australia (SA)	**52.7**	**7.7**	**9.8**	**2.0**
Number practising in SA	826	121	154	31

Notes: Dual registered therapists and hygienists have been included in both the therapist and hygienist classifications.

Number practising includes full-time and part-time staff.

Source: Dental Labour Force Data Collection, 2006

- In 2006, 826 dentists, 121 therapists, 154 hygienists and 31 prosthetists were practising in South Australia.
- Adelaide had the highest rate of practising dentists (62.3) and hygienists (14.3) but the lowest rate for therapists (8.8). The rate of practising therapists was highest in the Murray Lands / South East (13.0) followed by Eyre/Northern (11.1). There were no prosthetists practising in the Murray Lands / South East or Eyre / Northern Statistical Divisions.

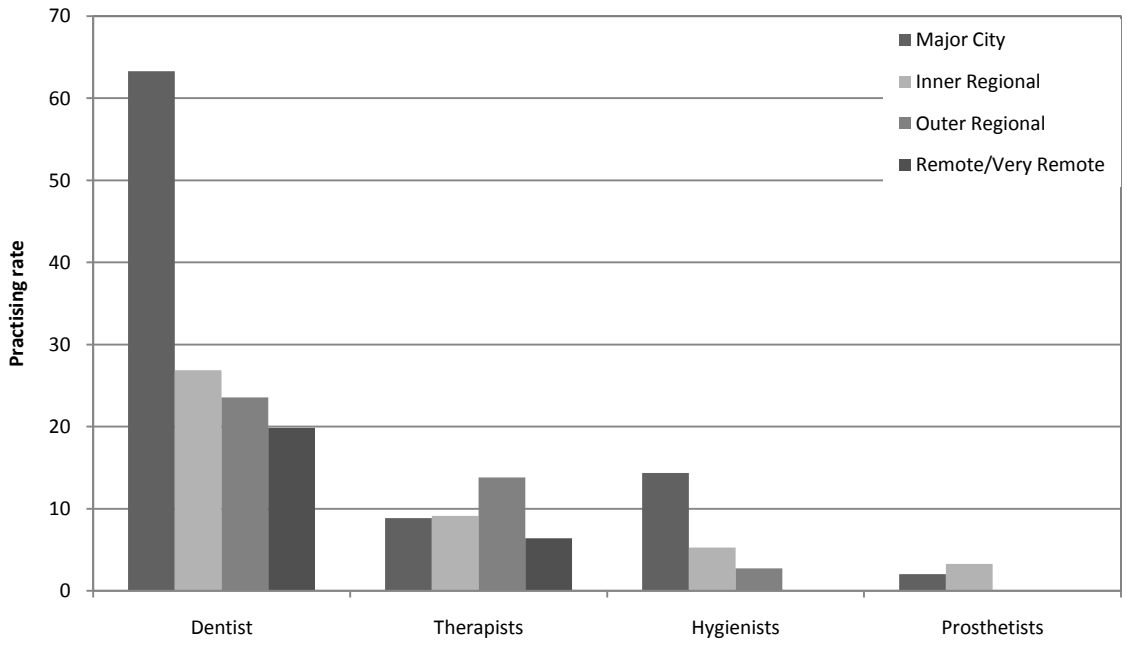

Figure 11.2: Practising dentists/therapists/hygienists/prosthetists per 100,000 population by ASGC Remoteness Area, 2006

Number practising per 100,000 population	Dentists	Therapist	Hygienists	Prosthetists
Major City	63.3	8.8	14.4	2.0
Inner Regional	26.9	9.1	5.3	3.3
Outer Regional	23.6	13.8	2.7	—
Remote/Very Remote	19.8	6.4	—	—
South Australia	**52.7**	**9.4**	**11.5**	**2.0**

Notes: Dual registered therapists and hygienists have been included in both the therapist and hygienist classifications.

Number practising includes full-time and part-time staff.

Source: Dental Labour Force Data Collection, 2006

- The rate of practising dentists per 100,000 in Major City areas (63.3) was almost two and a half times the rate in Inner Regional areas (26.9), and more than three times the rate in Remote/Very Remote areas (19.8).
- The highest rate of practising therapists was seen in Outer Regional areas (13.8). Major City areas had the highest rate of practising hygienists (14.4).
- The rate of practising prosthetists was highest in Inner Regional areas (3.3), with 2.0 per 100,000 population practising in Major City areas. There were no prosthetists practising in Remote/Very Remote areas in 2006.

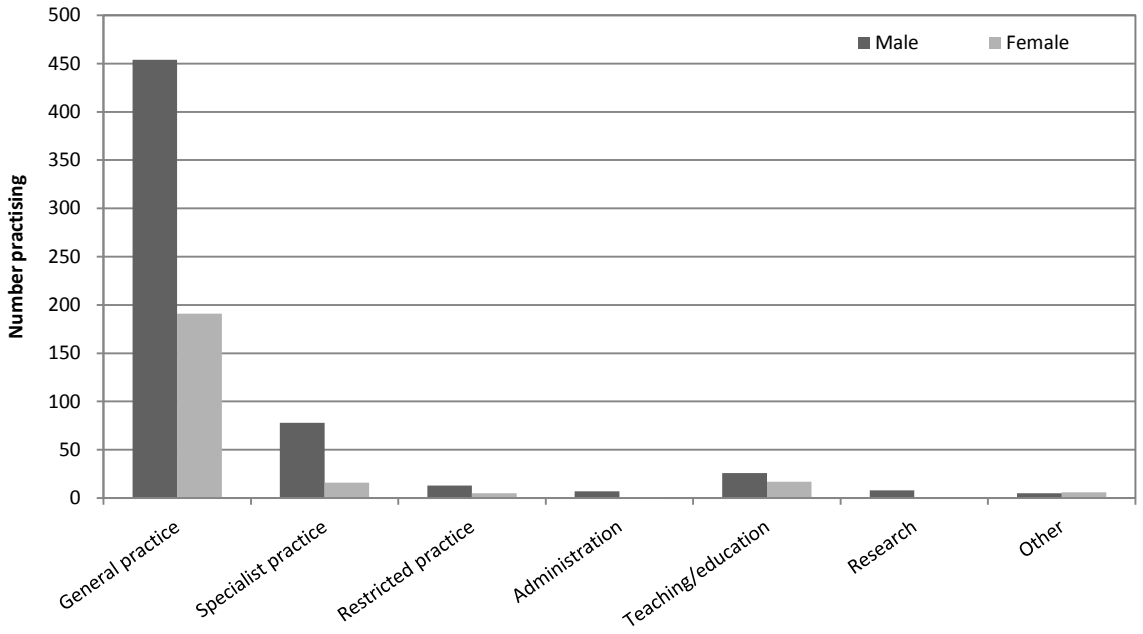

Figure 11.3: Number of practising dentists by area of main practice and sex, 2006

Number practising	General practice	Specialist practice	Restricted practice	Admin.	Teaching/ education	Research	Other	Total
Male	454	78	13	7	26	8	5	590
Female	191	16	5	1	17	0	6	236
Total	**645**	**95**	**17**	**8**	**42**	**8**	**11**	**826**

Note: Number practising includes full-time and part-time staff.

Source: Dental Labour Force Data Collection, 2006

- There were more male than female dentists practising in all areas except for 'Other' in South Australia in 2006.
- A total of 454 practising dentists employed in general practice were male, more than two and a half times the number of females dentists in general practice (191).

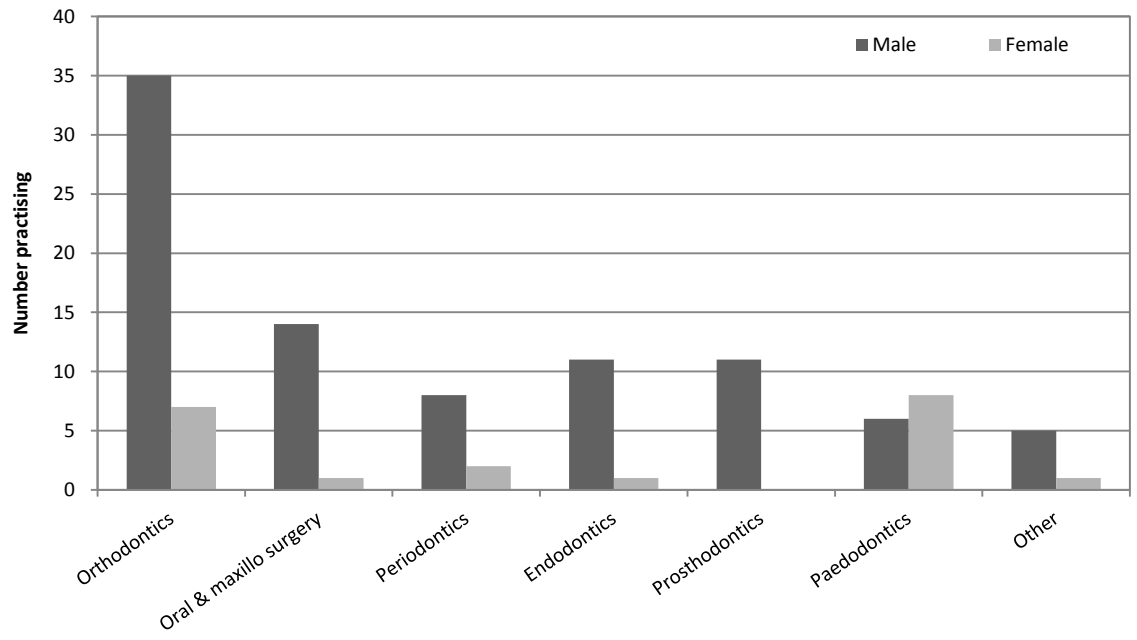

Figure 11.4: Number of practising dentists in specialist/restricted practice by speciality and sex, 2006

Number practising	Orthodontics	Oral and maxillofacial surgery	Periodontics	Endodontics	Prosthodontics	Paedodontics	Other	Total
Male	35	14	8	11	11	6	5	91
Female	7	1	2	1	0	8	1	21
Total	**43**	**15**	**11**	**12**	**11**	**14**	**6**	**112**

Note: Number practising includes full-time and part-time staff.

Source: Dental Labour Force Data Collection, 2006

- In all specialties in 2006, except for paedodontics, the number of male dentists was higher than the number of female dentists.
- There were 35 male orthodontists compared with 7 female orthodontists.

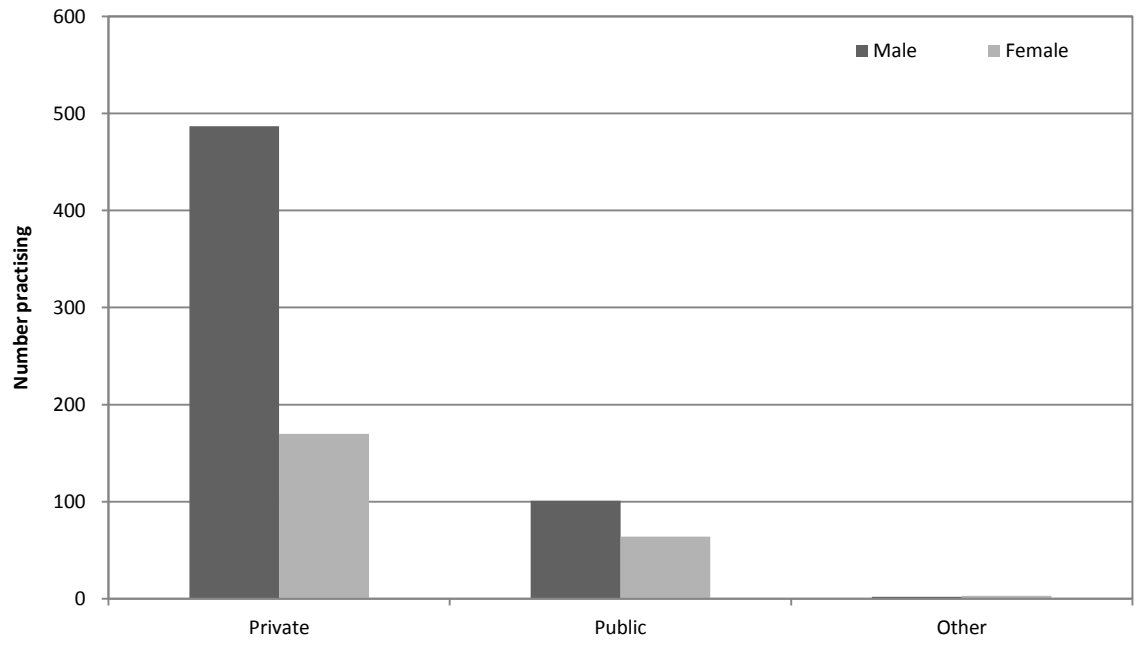

Figure 11.5: Number of practising dentists by type of main practice and sex, 2006

Number practising	Private	Public	Other	Total
Male	487	101	2	590
Female	170	64	3	236
Total	**657**	**165**	**5**	**826**

Note: Number practising includes full-time and part-time staff.

Source: Dental Labour Force Data Collection, 2006

- Out of 657 practising dentists, 79.5% were employed in private practice and 20.0% in public practice.
- Of practising male dentists, 82.5% worked in private practice, compared with 72.0% of practising female dentists. Likewise, a smaller percentage of males worked in public practice (17.1%) than females (27.1%).

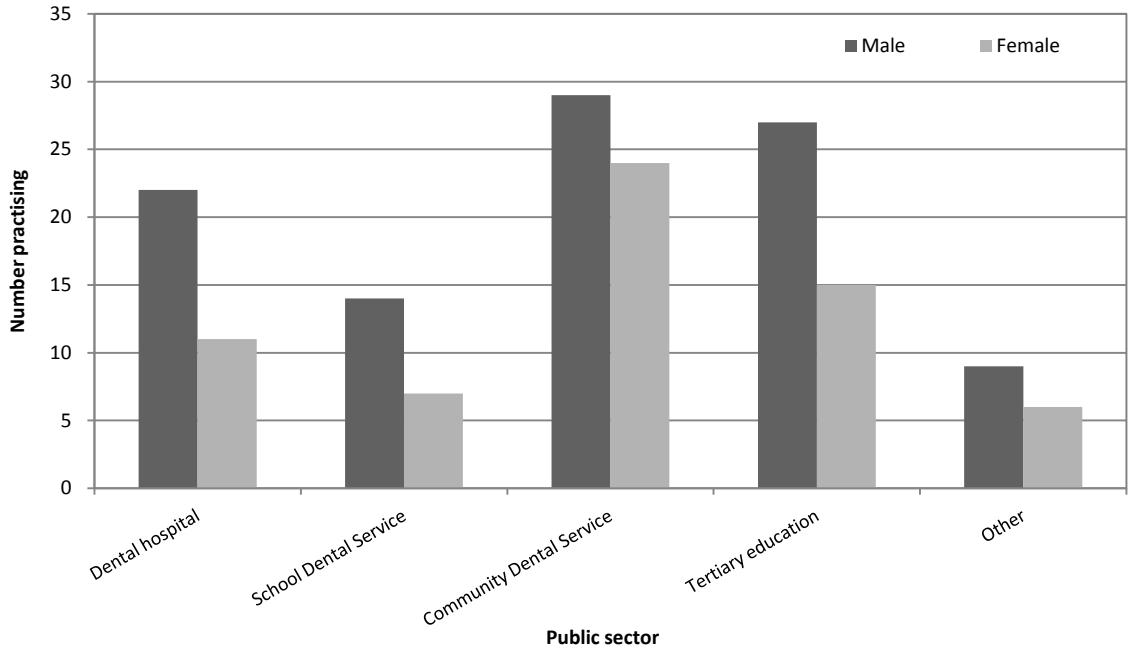

Figure 11.6: Number of dentists practising in the public sector by type of main practice and sex, 2006

Number practising	Dental hospital	School Dental Service	Community Dental Service	Tertiary education	Other	Total
Male	22	14	29	27	9	101
Female	11	7	24	15	6	64
Total	**33**	**21**	**53**	**43**	**15**	**165**

Note: Number practising includes full-time and part-time staff.

Source: Dental Labour Force Data Collection, 2006

- The Community Dental Service was the most common place of employment, with 32.0% of dentists practising in the public sector employed in this service, followed by tertiary education (26.1%) and dental hospitals (20.0%).
- Twice as many males as females worked in public dental hospitals, the School Dental Service and tertiary education institutions.

Summary

- There were 62.3 practising dentists per 100,000 population in the Adelaide Statistical Division (SD), almost two and a half times the number in the total rest-of-state (26.6). A higher rate of dentists practised in Outer Adelaide / Yorke and Lower North SDs (27.6) than either Murray Lands / South East or Eyre / Northern SDs (25.9 for each).
- Similarly, the rate of hygienists per 100,000 population in the Adelaide SD (14.3) was more than three and a half times the rate outside Adelaide (3.8). The distribution of practising hygienists showed a similar pattern to dentists, the rate tending to decrease as the distance from Adelaide increased. There were 5.7 hygienists per 100,000 population in Outer Adelaide / Yorke and Lower North SDs.
- The rate of practising prosthetists was higher within (2.0) than outside (1.5) Adelaide SD. The highest rate was, however, in Outer Adelaide / Yorke and Lower North SDs (4.4). There were no practising prosthetists in Murray Lands / South East or Eyre/Northern SDs.
- A higher number of dental therapists practised outside Adelaide (10.9) than within Adelaide SD (8.8). The rate was highest in Murray Lands / South East SDs (13.0) followed by Eyre/Northern SDs (11.1).
- The rate of practising dentists and hygienists per 100,000 population decreased with remoteness. In Major City areas, there were 63.3 dentists and 14.4 hygienists per 100,000 population. The rate of dentists decreased to 26.9 in Inner Regional areas, 23.6 in Outer Regional areas and 19.8 in Remote/Very Remote areas. A rate of 2.7 hygienists practised in Outer Regional areas, which was half the rate in Inner Regional areas (5.3). There were no hygienists practising in Remote/Very Remote areas.
- The highest rate of practising therapists was recorded in Outer Regional areas (13.8), followed by 9.1 in Inner Regional areas and 8.8 in Major City areas. Prosthetists had a practising rate of 3.3 in inner regional areas, a higher rate than that in Major City areas (2.0). There were no prosthetists in either Outer Regional or Remote areas. Overall, the rate of practising dental professionals decreased with remoteness.
- The majority of dentists (78%) were employed in general practice, followed by specialist practice (12%). There was a higher number of males than females in all areas of practice. In specialist practice, 82% of practising dentists were male. This was higher than in general practice, where 70% were male. Of practising dentists in teaching/education, 62%were male.
- Orthodontics was the specialty/restricted practice with the greatest number of practising dentists, accounting for almost 40% of all dentists. Oral and maxillofacial surgery and paedodontics each accounted for 13% of the dental specialty/restricted practice labour force. Male dentists outnumbered females in all fields excepting paedodontics, where 8 out of the 14 practising paedodontists were female. Of dentists in oral and maxillofacial surgery, 93% were male. In orthodontics, 81% of specialists were male.
- Private practices employed the majority (80%) of practising dentists. In both private and public practice, there were more males than females employed. Males accounted for 74% of privately employed dentists, but only 61% of those employed in the public sector.

- In the public sector the Community Dental Service employed the majority of practising dentists (32%), followed by tertiary education (26%) and the dental hospitals (20%). While 71.4% of all practising dentists were male, only 54.7% of dentists practising in the Community Dental Service and 62.8% in tertiary education were male.

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Glossary

Calculus	A calcified deposit that forms on the teeth above or below the gum line
Cardholder	A person who has a Pensioner Concession Card or a Health Care Card and hence is entitled to publicly funded dental care
Caries	Bacterial disease that causes the demineralisation and decay of teeth and can involve inflammation of the central dental pulp
Cavitated decay	Decay of the teeth caused by caries, and progressing to cavities in the enamel or cementum and the dentine
Community Periodontal Index (CPI)	An index used to indicate periodontal status; the maximum CPI score for a patient is recorded. The index has five categories increasing in order of severity: 0 = healthy 1 = bleeding observed 2 = calculus present 3 = pockets of 4–5 mm 4 = pockets of 6 mm or more
Deciduous dentition	Primary (baby) teeth
Dentate	Having at least one natural tooth
Dentist	Provides a range of preventive, diagnostic and restorative dental services
Dental hygienist	Educates the community in the principles of preventive dentistry and motivates individuals to take responsibility for their own oral health; performs a restricted range of clinical services and works under the direction of a dentist, who is responsible for patient diagnosis and prescribes the treatment to be carried out by the hygienist
Dental prosthetist	Responsible for construction and fitting of dentures and sporting mouthguards; maintains, repairs and relines dentures either by direct consultation with a patient or by referral from a dentist
Dental therapist	Undertakes promotion of oral health and dental health education; performs a restricted range of clinical services predominantly on school-aged children
dmft	Decayed, missing or filled teeth for deciduous dentition
DMFT	Decayed, missing or filled teeth for permanent dentition
Edentulism/edentulous	Having no natural teeth
Endodontics	The study, treatment and prevention of diseases of the pulp

	of teeth; a major part of treatment is root canal treatment
Fissure sealant	A special varnish that seals pits and fissures in teeth to prevent cavities from developing
Gingivitis	Inflammation of the gums
Malocclusion	Imperfect alignment of teeth
Maxillofacial	Relating to the jaw and middle third of the face
Orthodontics	The branch of dentistry that is concerned with the growth and development of the face and jaws and the treatment of irregularities of the teeth
Paedodontics	The branch of dentistry that is concerned with the provision of dental treatment to children
Periodontics	The branch of dentistry that is concerned with the tissues that support and attach the teeth and the treatment and prevention of periodontal diseases
Periodontitis	Inflammation of the gums and deeper tissues in the tooth socket
Permanent dentition	Adult teeth
Prosthodontics	The branch of dentistry that is concerned with the provision of dentures, bridges and implant-retained prostheses

Abbreviations

ADPS	Adult Dental Programs Survey
AIHW	Australian Institute of Health and Welfare
ARCPOH	Australian Research Centre for Population Oral Health
CDC	(US) Centers for Disease Control
CDHS	Child Dental Health Survey
ERP	Estimated Residential Population
NDTIS	National Dental Telephone Interview Survey
SD	Statistical Division
WHO	World Health Organization