



The Child Dental Health Survey, South Australia 1998

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Abbreviations

d	deciduous decayed teeth or surfaces
D	permanent decayed teeth or surfaces
dmfs	deciduous decayed, missing and filled surfaces
dmft	deciduous decayed, missing and filled teeth
DMFS	permanent decayed, missing and filled surfaces
DMFT	permanent decayed, missing and filled teeth
f	deciduous filled teeth or surfaces
F	permanent filled teeth or surfaces
m	deciduous missing teeth or surfaces
M	permanent missing teeth or surfaces
SD	standard deviation

Purpose of this report

The Child Dental Health Survey, originally established in 1977 by the (then) Commonwealth Department of Health, is intended to provide time-series data for the purpose of monitoring the dental health status of Australian school students. This report continues the series of annual reports providing descriptive statistics concerning child dental health in South Australia, and follows the 1997 report. There are four aims of the Survey:

1. To maintain the time-series of statistics providing annual estimates of children's dental health status;
2. To examine temporal changes in caries experience among children;
3. To examine the distribution of dental health status by geographic location and demographic factors;
4. To identify high risk groups according to geographic location and demographic status.

The following sections of this report describe: the age and sex of participants in the sample; their deciduous and permanent caries experience; frequency of fissure sealants; and history of School Dental Service examinations. In addition, there is a simple summary statement highlighting differences between the 1998 and 1997 data. However, no tests of statistical significance have been undertaken and descriptions of difference between years are intended as a guide to the reader rather than a formal evaluation of trends.

Survey methods

Data for the Child Dental Health Survey were collected during the 1998 calendar year from a sample of patients of the South Australian School Dental Service by dental therapists and dentists. They transcribed data items from routine clinical records on to Optical Mark Reader (OMR) data sheets which were forwarded to the AIHW Dental Statistics and Research Unit for processing and analysis.

Data preparation

Prior to analysis a check was made for missing or erroneous data. Where tooth level information was incorrect (e.g., a tooth indicated as both fissure sealed and unerupted) or where required fields were missing, the OMR form was returned to the relevant clinic for correction.

Linear regression of age on the number of deciduous teeth present and the number of permanent teeth present revealed several outliers with standardised residuals greater than 3 standard deviations from the mean. A visual check allowed 8 of these cases to be corrected where it was evidently a data recording error. Four cases which could not be corrected and were implausible (e.g., a 9-year-old with 20 deciduous teeth and 0 permanent teeth) were eliminated from the data set.

Sampling procedure

A random sampling procedure was used by selecting those students whose birthdays were on the 13th, 30th or 31st day of any month, a sampling ratio of approximately 1:12.

Participants from non-metropolitan clinics who had previously participated in the Child Fluoride Study¹ were sampled at a higher rate by including students born on the 13th or between the 26th and 31st of any month, a sampling rate of approximately 1:4.7.

Approximately one third of students sampled from non-metropolitan clinics had previously participated in the Child Fluoride Study and these students comprised approximately 8% of the total sample for this report.

Actual sampling rates varied widely across South Australian clinics and for all clinics except one fell short of the intended sampling rate. Several clinics failed to sample any students while only two clinics sampled in excess of 80% of the expected number of students. Overall, approximately one third of the number of children who were expected to be sampled were actually sampled. This comprised approximately 2.6% of the 134,040 students examined by the South Australian School Dental Service in 1998.

Sampling by area is shown in Table 1. Sampling rates between metropolitan and non-metropolitan areas across age groups were roughly comparable. The weighted distribution shown in Table 1 indicates that weighted results are based on a sample comprising approximately 2.5 times the students seen in metropolitan clinics ($n=2,582$) than those seen in non-metropolitan clinics ($n=996$). The mean age of clients at metropolitan clinics was 11.05 compared to a mean age of 11.30 for children at non-metropolitan clinics.

Data analyses

All data were weighted by both the sampling ratio used for selection and months since last visit (which was used due to the under-representation of students on longer recall schedules in the sample). Effectively this resulted in reducing the contribution of those students from non-metropolitan areas who had previously participated in the Child Fluoride Study and students whose last School Dental Service examination was more recent.

Unit records were further weighted to reflect the Estimated Residential Population (ERP) of 5–14-year-olds according to Statistical Divisions within South Australia as at 30 June 1998 as published by the Australian Bureau of Statistics (1999). Statistical Divisions are shown in Figure 1. For reporting purposes, the Adelaide Statistical Division was analysed by the four Subdivisions of which it is comprised: Northern Adelaide, Eastern Adelaide, Southern Adelaide and Western Adelaide (Figure 2). Assignment of Statistical Divisions to all unit records was based on the location of the clinic to which a child attended.

The relative sample sizes and population estimates by Statistical Division as a percentage of the total sample and South Australian 5–14-year-old population are shown in Figure 3. While the results of sampling were relatively consistent with ERP by Statistical Division, as a result of sampling Eastern Adelaide, Outer Adelaide and South East received the largest weights in the analysis (mean weights = 1.52, 1.61 and 1.27 respectively) while Southern Adelaide, Yorke and Lower North, Murray Lands and Eyre received the lowest weights

¹ An NHMRC funded project, conducted in collaboration with SADS, designed to examine the effect of water fluoridation on caries incidence.

(mean weights = 0.81, 0.86, 0.88 and 0.51 respectively). The final unit record weights were applied to all statistics computed for Tables 2 to 13 such that the weighted contribution of each Statistical Division was proportional to the percentage represented by that Statistical Division in the South Australian population.

The intended purpose of the weighting protocol was to obtain a sample with characteristics representative of those of the student population covered by the School Dental Service for 1998. It should be noted that all analyses use the weighted distribution of children to derive results. However, months since last visit was not used to weight the data in Tables 12 and 13 because the results included time since last visit. Weighted numbers are rounded to the nearest whole number for ease of interpretation.

Statistical analyses included in this report are: the age and sex of students in the sample; their deciduous and permanent caries experience; frequency of fissure sealants; children's history of School Dental Service examinations; and caries experience by geographic region. Counts of decayed teeth also includes recurrent caries in filled teeth. Except for Tables 12 and 13, data relating to second or subsequent examinations of students within the study period have not been used. Age-specific indices denoted with an asterisk (*) are those in which the relative standard error exceeds 40 per cent and population estimates of these indices should be viewed as statistically unreliable.

Table 1: Area of sampling (weighted)

Age	Metropolitan		Non-metropolitan		Unknown		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
2	3	0.1	2	0.2	0	0.0	5	0.1
3	16	0.6	1	0.1	0	0.0	17	0.5
4	42	1.6	12	1.2	0	0.0	54	1.5
5	94	3.6	40	4.0	0	0.0	134	3.7
6	160	6.2	40	4.0	1	5.6	201	5.6
7	165	6.4	54	5.4	1	5.6	220	6.1
8	161	6.2	72	7.2	0	0.0	233	6.5
9	191	7.4	92	9.2	2	11.1	285	7.9
10	209	8.1	66	6.6	2	11.1	277	7.7
11	283	11.0	98	9.8	2	11.1	383	10.7
12	330	12.8	126	12.7	6	33.3	462	12.8
13	235	9.1	115	11.5	0	0.0	350	9.7
14	228	8.8	83	8.3	2	11.1	313	8.7
15	196	7.6	83	8.3	0	0.0	279	7.8
16	156	6.0	76	7.6	1	5.6	233	6.5
17	106	4.1	35	3.5	1	5.6	142	3.9
18	4	0.2	1	0.1	0	0.0	5	0.1
19	3	0.1	0	0.0	0	0.0	3	0.1
Total	2,582	100.0	996	100.0	18	100.0	3,596	100.0

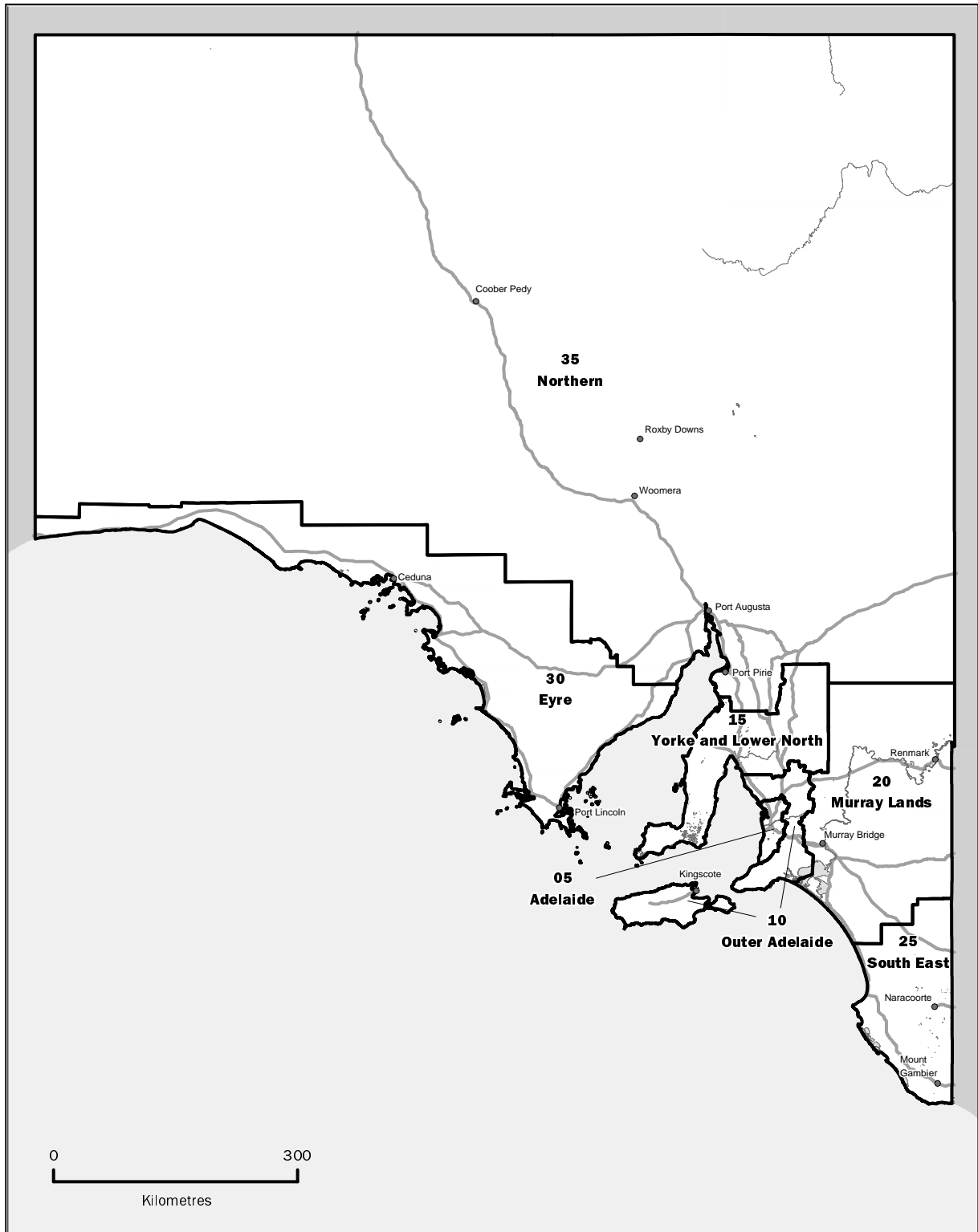


Figure 1: South Australian Statistical Districts (Australian Bureau of Statistics, 1999)

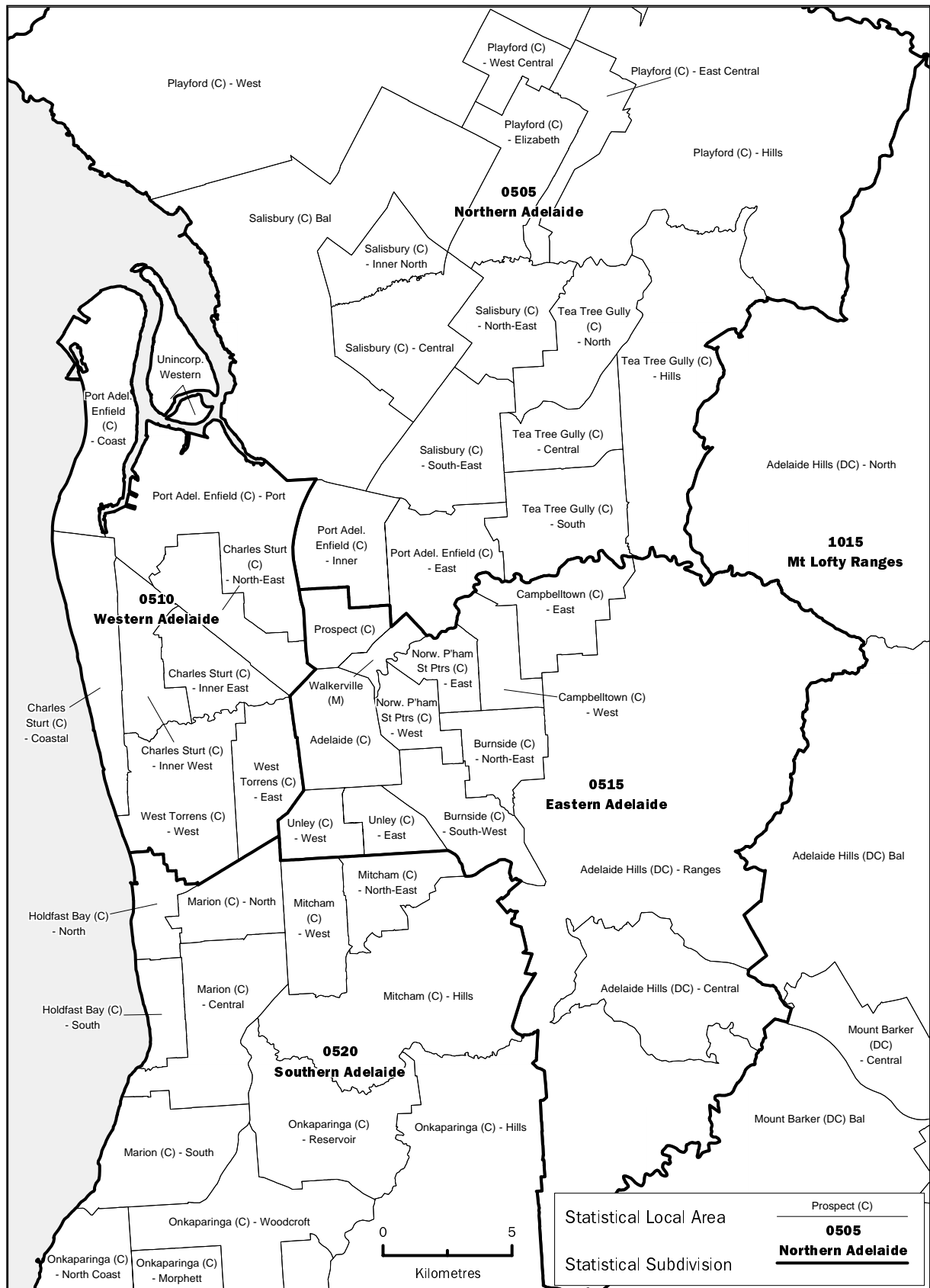


Figure 2: Subdivisions of Adelaide Statistical Division (Australian Bureau of Statistics, 1999)

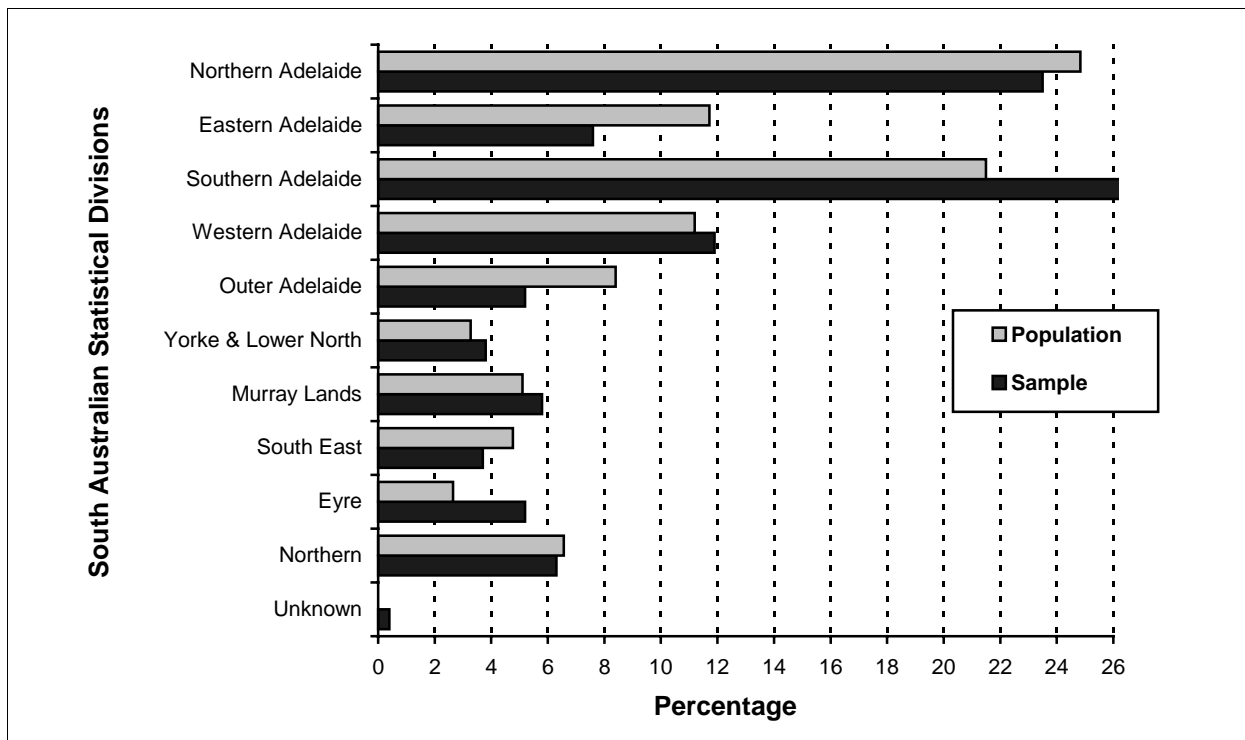


Figure 3: Percentage of children in sample and South Australian population by Statistical Division

Demographic composition of the sample

Table 2 lists at the left the unweighted number of students sampled according to their age. The majority of students were aged 5 years or more (94.0%) and there were large numbers of students in the range 5 to 16 years. The ages of sampled children approximated a normal distribution, peaking for 12-year-olds.

The age distribution of the sample is related to the main target groups of students served by the School Dental Service in SA. This illustrates that the sample is representative of students in primary school and early secondary school, rather than all students in South Australia up to the age of 18. Consequently, those children who are outside the main school dental service target groups (less than 5 or more than 17 years) may differ on key characteristics and are likely to be less representative of their respective age groups in the SA population.

Males and females were represented in approximately equivalent numbers although more males than females were sampled overall. The mean ages of males and females were similar, being 10.68 and 10.59 respectively.

Table 2 also shows the weighted distribution of students by age. The number of 2–5-year-olds was weighted down (from 423 students to 210 students) whereas several of the older age groups were weighted up slightly. This is reflected in the mean age of the sample which increased from 10.64 for the unweighted data to 11.14 for the weighted data.

Changes since 1997

The 1998 sample was slightly smaller than the 1997 sample. In particular, 10- and 11-year-olds were represented in reduced numbers in comparison to 1997. The ratio of males to females was similar in 1998 (1.06:1) to the ratio in 1997 (1.09:1).

Table 2: Demographic composition of the sample

Age	Children in sample			Children in sample (weighted)		
	Males	Females	Persons	Males	Females	Persons
	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
2	11	10	21	2	3	5
3	23	33	56	10	7	17
4	65	71	136	29	25	54
5	97	113	210	72	62	134
6	116	103	219	97	102	200
7	112	108	220	106	114	220
8	90	114	204	109	124	233
9	132	106	238	166	119	285
10	126	118	244	141	136	278
11	185	149	334	219	164	383
12	211	222	433	225	237	462
13	182	166	348	184	166	350
14	142	146	288	161	152	313
15	119	133	252	130	149	279
16	104	98	202	118	115	233
17	65	69	134	69	73	142
18	5	1	6	4	1	5
19	1	0	1	3	0	3
Total	1,786	1,760	3,546	1,847	1,749	3,595

Deciduous dentition caries experience

For children between 4 and 12 years of age, the mean number of clinically decayed teeth ranged from a high of 0.96 among 4-year-old children to a low of 0.25 among students aged 12 years (see Table 3). However this trend is not linear, there being a decline in clinically detectable decay to the age of 6 where it remained relatively unchanged until the age of 10. Few teeth in any given age-group were indicated as missing due to caries although this figure was highest for the youngest children. The mean number of filled teeth showed a general increase to the ages of 9 and 10 before declining dramatically as a result of the exfoliation of deciduous teeth. The trend in the mean number of filled teeth was not linear. There was also no clear trend in deciduous dmft scores by age although caries experience was highest among 8–10-year-olds (see Table 4).

Table 3: Deciduous dentition – decayed, missing and filled teeth by age[†]

Age	Children	Decayed (d)		Missing (m)		Filled (f)	
	<i>n</i>	mean	SD	mean	SD	mean	SD
≤3	21	0.28*	1.09*	0.05*	0.46*	0.06*	0.35
4	54	0.96	1.71	0.13*	0.97*	0.53	1.21
5	134	0.67	1.40	0.06*	0.42*	0.40	1.09
6	201	0.45	1.04	0.05*	0.42*	0.74	1.62
7	220	0.43	1.04	0.03*	0.21*	0.61	1.37
8	233	0.46	1.09	0.01*	0.10*	1.01	1.80
9	285	0.47	0.83	0.02*	0.17*	1.17	1.74
10	249	0.39 (0.37)	0.78	0.00*	0.06*	1.13 (1.02)	1.77
11	269	0.29 (0.21)	0.69	0.01*	0.22*	0.68 (0.47)	1.30
12	210	0.25 (0.11)	0.58	–	–	0.63 (0.30)	1.14

[†] Previous South Australian CDHS reports have included children with no deciduous teeth in the analyses of deciduous caries experience, effectively giving these children scores of 0 for decayed, missing and filled teeth. Numbers in brackets refer to results calculated by this previous method. Including children with no deciduous teeth in analyses understates the total level of caries experience of children aged between 10 and 12.

* relative standard error ≥ 40%

Table 4: Deciduous dentition – caries experience indices by age[†]

Age	Children	Teeth present	dmft		d/dmft	dmft=0
	<i>n</i>	mean	mean	SD	%	%
≤3	21	19.90	0.40*	1.24*	60.8	83.2
4	54	19.91	1.62	2.58	68.9	54.5
5	134	19.64	1.13	2.02	59.6	64.9
6	201	17.39	1.24	2.24	43.0	65.6
7	220	15.01	1.07	1.95	43.6	64.7
8	233	12.31	1.48	2.37	33.9	58.1
9	285	11.06	1.66	2.11	35.1	42.0
10	249	8.71 (7.93)	1.53 (1.39)	2.11	30.6	47.7 (52.0)
11	269	6.59 (4.70)	0.99 (0.69)	1.57	34.3 (33.8)	57.7 (70.5)
12	210	4.73 (2.21)	0.89 (0.41)	1.38	29.4	58.0 (80.4)

[†] Previous South Australian CDHS reports have included children with no deciduous teeth in the analyses of deciduous caries experience, effectively giving these children scores of 0 for decayed, missing and filled teeth. Numbers in brackets refer to results calculated by this previous method. Including children with no deciduous teeth in analyses understates the total level of caries experience of children aged between 10 and 12.

* relative standard error ≥ 40%

The percentage of caries experience represented as untreated decay (d/dmft) showed a strong age-associated decline, reducing from 68.9% among 4-year-old children to 29.4% for students aged 12 years (see Table 4). This pattern of deciduous caries experience indicates that students in the youngest age groups enter the School Dental Service program with a relatively high level of untreated decay.

The percentage of students free of caries experience (% dmft = 0) also showed a general age-associated reduction from the mid-60 percent range among children up to the age of 7 years to 42.0% among 9-year-olds before increasing to 58.0% for 12-year-olds. The 6-year-old age group had the highest percentage of children with dmft=0 (66.8%).

The surface level caries experience (see Table 5) shows approximately 50–60% higher caries experience (dmf) than that shown when looking at the tooth level. There were approximately 25–35% more clinically decayed surfaces than there were clinically detectable decayed teeth. General trends are similar to those indicated in analyses at the tooth level.

Changes since 1997

The mean number of clinically decayed teeth decreased from 1997 for 6- and 7-year-olds while there was an increase in 5-year-olds from 0.35 to 0.67, 8-year-olds from 0.39 to 0.46, and 10-year-olds from 0.31 to 0.39. There were also decreases in the mean dmft for 6–8-year-olds in the order of 0.1 to 0.5 teeth affected. There was an increase in mean dmft for children up to 5 years of age and for those aged 10 years.

There was no clear trend in changes to the percentage of dmft expressed as decay between 1997 and 1998, with increases for 5- and 8-year-olds and a decrease for 6-year-olds. Similarly, changes in the percentage of students with no deciduous caries experience (dmft=0) were not uniform between 1997 and 1998. Percentage dmft=0 increased for children aged between 6 and 8 years and decreased for children aged 5 and 9 years old.

Table 5: Deciduous dentition – surface level caries experience by age

Age	Children <i>n</i>	Surfaces mean	Decayed (d)		Missing (m)		Filled (f)		dmfs	
			mean	SD	mean	SD	mean	SD	mean	SD
≤3	21	87.31	0.43*	1.93*	0.26*	2.31*	0.06*	0.35*	0.75*	2.99*
4	54	87.01	1.17	2.12	0.64*	4.58*	0.90	2.42	2.70	6.03
5	134	86.26	0.87	1.96	0.27*	1.84*	0.62	2.34	1.76	4.26
6	201	77.34	0.60	1.46	0.23*	1.80*	1.09	2.65	1.92	3.99
7	220	67.85	0.62	1.62	0.16*	1.05*	1.01	3.04	1.79	3.91
8	233	57.03	0.63	1.85	0.05*	0.51*	1.69	3.55	2.37	4.54
9	285	51.61	0.62	1.11	0.10*	0.83*	1.75	2.84	2.47	3.49
10	249	41.09	0.51	1.19	0.02*	0.28*	1.78	3.11	2.30	3.61
11	269	31.09	0.38	1.03	0.07*	1.10*	1.02	2.08	1.47	2.70
12	210	22.44	0.31	0.76	–	–	0.98	2.03	1.29	2.33

* relative standard error ≥ 40%

Permanent teeth caries experience

The mean number of clinically decayed permanent teeth was consistently smaller than the mean number of decayed deciduous teeth for students aged less than 12 years (see Table 6). For children up to the age of 8 years this can be accounted for by the small number of permanent teeth present. However the mean number of clinically decayed teeth remained low into the teen years (peaking at a mean of 0.33 for 15-year-olds) despite the increasing number of permanent teeth present from the age of 9 onwards.

The mean number of teeth missing due to caries was low for all age groups while the mean number of filled teeth increased with increasing age, from 0.00 at age 6 to 1.36 for children aged 17 years and over.

The mean DMFT increased with age from a low of 0.05 for 6-year-olds to a high of 1.65 for 17–19-year-olds (Table 7). The mean DMFT for 12-year-olds was 0.52. The D/DMFT ratio declined with age, reducing from 90.2% for 6-year-olds to 19.8% for students aged 16 years and older. Approximately two-fifths of 12-year-old DMFT was accounted for by clinically detectable decay. The percentage of students with no caries experience in their permanent dentition also declined systematically with increasing age. Approximately 72% of 12-year-old students had a DMFT=0.

Table 6: Permanent dentition – decayed, missing and filled teeth by age[†]

Age	Children <i>n</i>	Decayed (D)		Missing (M)		Filled (F)	
		mean	SD	mean	SD	mean	SD
5	36	–	–	–	–	–	–
6	152	0.04* (0.03*)	0.24*	–	–	0.00	0.06*
7	212	0.07	0.27	0.00	0.06*	0.03*	0.21*
8	233	0.13	0.43	–	–	0.07	0.37
9	285	0.07	0.31	–	–	0.14	0.43
10	278	0.12	0.44	–	–	0.17	0.51
11	383	0.14	0.44	0.02*	0.23*	0.22	0.61
12	462	0.21	0.62	0.00	0.04*	0.31	0.75
13	350	0.23	0.54	0.01*	0.20*	0.42	0.90
14	313	0.28	0.73	0.01*	0.13*	0.61	1.24
15	279	0.33	0.88	0.02*	0.24*	0.68	1.22
16	233	0.26	0.79	0.01*	0.15*	0.91	1.57
≥17	150	0.28	0.66	0.00	0.01*	1.36	2.23

[†] Previous South Australian CDHS reports have included children with no permanent teeth in the analyses of permanent caries experience, effectively giving these children scores of 0 for decayed, missing and filled teeth. Numbers in brackets refer to results calculated by this previous method. Including children with no permanent teeth in analyses understates the total level of caries experience of children aged up to 7.

* relative standard error ≥ 40%

The surface level caries experience in the permanent dentition (see Table 8) shows approximately 15–30% higher caries experience (DMF) than that shown in the tooth level analyses. There were approximately 5–20% more clinically decayed surfaces than there were clinically detectable decayed teeth.

Changes since 1997

There was evidence of a small increase in the number of decayed permanent teeth across several age groups, however the magnitude of these differences was small. DMFT scores were relatively unchanged between 1997 and 1998 for students up to 10 years old. The direction of changes in DMFT were not consistent in the older age groups.

Changes in the percentage of DMFT expressed as clinically detectable decay were also inconsistent between 1997 and 1998 with several of the younger age groups showing a decrease while 8-year-old children and those aged between 10 and 15 inclusive demonstrated a mean increase. The percentages of children with DMFT=0 were mostly little changed between 1997 and 1998 although children aged 11 and 12 demonstrated an increase. There was a 4.0% increase in the percentage of 12-year-old children with no caries experience between 1997 and 1998.

Table 7: Permanent dentition – caries experience indices by age[†]

Age	Children	Teeth present	DMFT		D/DMFT	DMFT=0
	<i>n</i>	mean	mean	SD	%	%
5	36	2.95 (0.79)	–	–	–	100.0
6	152	6.23 (4.59)	0.05* (0.03*)	0.24*	90.2	95.9 (96.9)
7	212	8.31 (8.02)	0.10	0.35	67.8	90.9 (91.2)
8	233	11.10	0.21	0.64	70.6	88.0
9	285	12.67	0.21	0.54	30.2	83.7
10	278	16.32	0.29	0.70	37.9	81.4
11	383	20.38	0.37	0.82	39.8	78.5
12	462	24.07	0.52	1.06	41.0	72.3
13	350	26.19	0.66	1.17	40.9	62.5
14	313	27.38	0.90	1.67	31.7	62.4
15	279	27.43	1.02	1.60	32.2	57.4
16	233	27.43	1.18	1.87	22.2	53.6
≥17	150	27.42	1.65	2.50	19.8	44.2

[†] Previous South Australian CDHS reports have included children with no permanent teeth in the analyses of permanent caries experience, effectively giving these children scores of 0 for decayed, missing and filled teeth. Numbers in brackets refer to results calculated by this previous method. Including children with no permanent teeth in analyses understates the total level of caries experience of children aged up to 7.

* relative standard error ≥ 40%

Table 8: Permanent dentition – surface level caries experience by age

Age	Children <i>n</i>	Surfaces mean	Decayed (D)		Missing (M)		Filled (F)		DMFS	
			mean	SD	mean	SD	mean	SD	mean	SD
5	36	13.68	–	–	–	–	–	–	–	–
6	152	28.17	0.06*	0.32*	–	–	0.00	0.06*	0.06*	0.33*
7	212	36.88	0.07	0.28	0.02*	0.30*	0.04*	0.26*	0.13	0.48
8	233	48.47	0.15	0.52	–	–	0.09	0.46	0.24	0.77
9	285	55.21	0.07	0.32	–	–	0.17	0.56	0.24	0.66
10	278	72.03	0.13	0.51	–	–	0.22	0.75	0.35	0.94
11	383	91.28	0.15	0.49	0.09*	1.15*	0.27	0.81	0.51	1.49
12	462	109.01	0.23	0.70	0.01*	0.19*	0.39	1.00	0.63	1.38
13	350	119.16	0.26	0.66	0.06*	0.98*	0.51	1.21	0.83	1.78
14	313	124.91	0.30	0.76	0.05*	0.66*	0.71	1.54	1.07	2.21
15	279	125.13	0.36	0.97	0.11*	1.19*	0.85	1.76	1.32	2.39
16	233	125.15	0.30	0.94	0.05*	0.73*	1.12	2.13	1.47	2.54
≥17	150	125.18	0.28	0.66	0.00	0.06*	1.69	2.98	1.97	3.25

* relative standard error ≥ 40%

All teeth caries experience

Not including the very young children, the percentage of students with at least one instance of untreated clinically observable decay in the combined deciduous and permanent dentition ranged from 14.6% of 16-year-olds to 38.2% of children aged 4 years (Table 9).

Apart from the relatively high percentages for 4- and 9-year-old children, there was a fairly limited range in the percentage of students with at least one decayed tooth, between 18 and 28% for most age groups. Few children had in excess of 4 clinically detectable decayed teeth.

Participants across all ages had few deciduous or permanent teeth missing due to caries ($m+M=0$). The distribution of the percentage of students with no fillings shows a bimodal distribution, the lowest points being for students aged 9 years and 16+ years. The decrease in the percentage $f+F=0$ between the ages of 7 and 9 most likely represents the exfoliation of filled deciduous teeth and the time lag before the filling of permanent teeth. The percentage of students with neither deciduous or permanent caries experience ($dmft+DMFT=0$) also declined in the middle age ranges (8 to 10 years). There was evidence of a beginning of a decline in both $f+F=0$ and $dmf+DMF=0$ for students aged 15 years old and over.

Changes since 1997

Between 1997 and 1998 there were decreases in the percentages of students with $d+D=0$ across several ages. There were, however, increases in the percentages of several age groups presenting without fillings. There was no clear trend in the percentages of students with $dmft+DMFT=0$ across age groups with some groups showing in increased percentage and some a decreased percentage between 1997 and 1998.

Table 9: All teeth – caries experience by age

Age	Children	d+D=						m+M=0	f+F=0	dmft+ DMFT=0
		0	1	2	3	4	5+			
	<i>n</i>	%	%	%	%	%	%	%	%	%
≤3	21	89.7	4.9*	0.6*	0.9*	2.0*	2.0*	98.7	94.6	83.2
4	54	61.8	17.4	4.4*	9.1*	0.6*	6.7*	98.1	77.9	54.5
5	134	74.6	6.3	9.6	2.5*	3.4*	3.6*	97.7	83.8	64.9
6	201	76.7	9.4	6.6	5.1	1.9*	0.3*	98.2	75.5	63.8
7	220	74.8	14.1	4.7	2.7	1.6*	2.2*	97.3	76.0	60.6
8	233	72.4	11.8	8.2	2.6	4.0	0.9*	99.0	65.5	53.4
9	285	66.1	21.8	8.4	2.2	0.4*	1.1*	98.3	51.1	38.8
10	278	72.2	16.3	5.2	4.9	1.1*	0.3*	99.7	56.4	48.0
11	383	77.3	14.5	6.0	1.4*	0.7*	0.1*	99.0	67.4	55.3
12	462	78.1	14.4	5.3	1.8	0.0	0.4*	99.8	70.3	58.9
13	350	77.9	18.4	2.5	1.2*	0.0	0.0	99.5	69.4	56.3
14	313	81.9	11.3	3.8	2.3	0.2*	0.3*	98.9	68.0	60.5
15	279	78.7	15.5	2.7	0.9*	1.0*	1.0*	98.7	66.7	54.9
16	233	85.4	8.3	3.3	1.3*	1.1*	0.5*	99.5	60.5	53.3
≥17	150	81.4	9.8	8.3	0.0	0.5*	0.0	100.0	51.8	43.5

* relative standard error ≥ 40%

Fissure sealants

As can be seen in Table 10, the mean number of fissure sealants increased in a relatively linear fashion with the increasing age of the participants. There was a mean of 1.28 sealants per child among 12-year-olds. Except for 6-year-olds, the prevalence of fissure sealants among those without permanent caries experience (DMFT=0) was consistently less than among those with some permanent caries experience (DMFT=1+). For children over the age of 6, the percentage of students with fissure sealants was between 41.0% (15-year-olds) and 136.0% (7-year-olds) greater for students with some caries experience compared to those with no caries experience. This suggests that fissure sealants were being used preferentially in students with past caries experience.

Changes since 1997

Between the years of 1997 and 1998 there were reductions across almost all age groups in the average number of fissure sealants. These changes were due primarily to a decrease in fissure sealants among those children with no caries experience. There was no clear trend in changes in the percentage who had fissure sealants in 1998 compared to 1997 for children with known caries experience.

Table 10: Fissure sealants by age

Age	Children			Children with DMFT=0		Children with DMFT=1+	
	<i>n</i>	mean	SD	<i>n</i>	%	<i>n</i>	%
6	201	0.08*	0.52*	195	3.1	6	0.0
7	220	0.14	0.64	200	5.0	19	14.6
8	233	0.50	1.02	205	23.6	28	33.9
9	285	0.72	1.22	238	27.0	46	55.7
10	278	0.89	1.37	226	30.0	52	60.6
11	383	1.14	1.49	300	38.8	83	72.6
12	462	1.28	1.68	334	41.1	128	65.3
13	350	1.64	1.86	219	45.9	131	66.0
14	313	1.85	2.14	195	43.3	118	76.6
15	279	2.28	2.49	160	55.3	119	78.0
16	233	2.20	2.41	125	43.7	108	81.8
≥17	150	2.80	2.64	66	63.2	84	77.5

* relative standard error ≥ 40%

School Dental Service examinations

Table 11 shows that an overwhelming majority of the students had previously been examined within the School Dental Service. The youngest children were the least likely to have had a previous examination. However, by 7 years of age more than 90% of students were found to have had a prior examination.

Table 12 refers to the period of time since the previous School Dental Service examination among children with a previous record of examination. There was a distinctive age-related pattern with younger children more likely than older children to have received a previous examination within the last 12 months. This is reflected in the mean time since last visit which increased linearly with age, from 12.39 months for the youngest group to 19.63 months for 16-year-olds. Between 58.1% and 83.6% of children in any age group had received their previous School Dental Service examination between 1 and 2 years previously.

Changes since 1997

The percentage of children having had a previous examination within a 12 month period decreased between 1997 and 1998 for almost all age groups. In line with this, there was a marked increase in the percentage of students having received an examination between 1 and 2 years previously.

The impact of these results is seen in an increase in the mean time since last visit across most age groups, ranging from a 3.6% increase for 7-year-olds to an increase of 12.9% for 5-year-olds.

Table 11: School Dental Service examinations by age

Age (years)	Children	Previous examination in School Dental Service		
		Yes	No	Unknown
	<i>n</i>	%	%	%
≤3	81	29.1	70.9	0.0
4	151	38.9	60.6	0.5*
5	240	55.1	43.3	1.6*
6	241	83.7	16.3	0.0
7	244	90.8	8.1	1.1*
8	239	94.8	2.7	2.4
9	274	97.7	1.3*	1.0*
10	264	97.0	1.0*	2.0*
11	348	96.0	2.8	1.3*
12	425	99.1	0.4*	0.5*
13	313	98.5	0.8*	0.7*
14	262	99.6	0.0	0.4*
15	240	99.0	0.6*	0.3
16	184	99.2	0.8*	0.0
≥17	126	100.0	0.0*	0.0

* relative standard error ≥ 40%

Table 12: Time since last School Dental Service examination by age

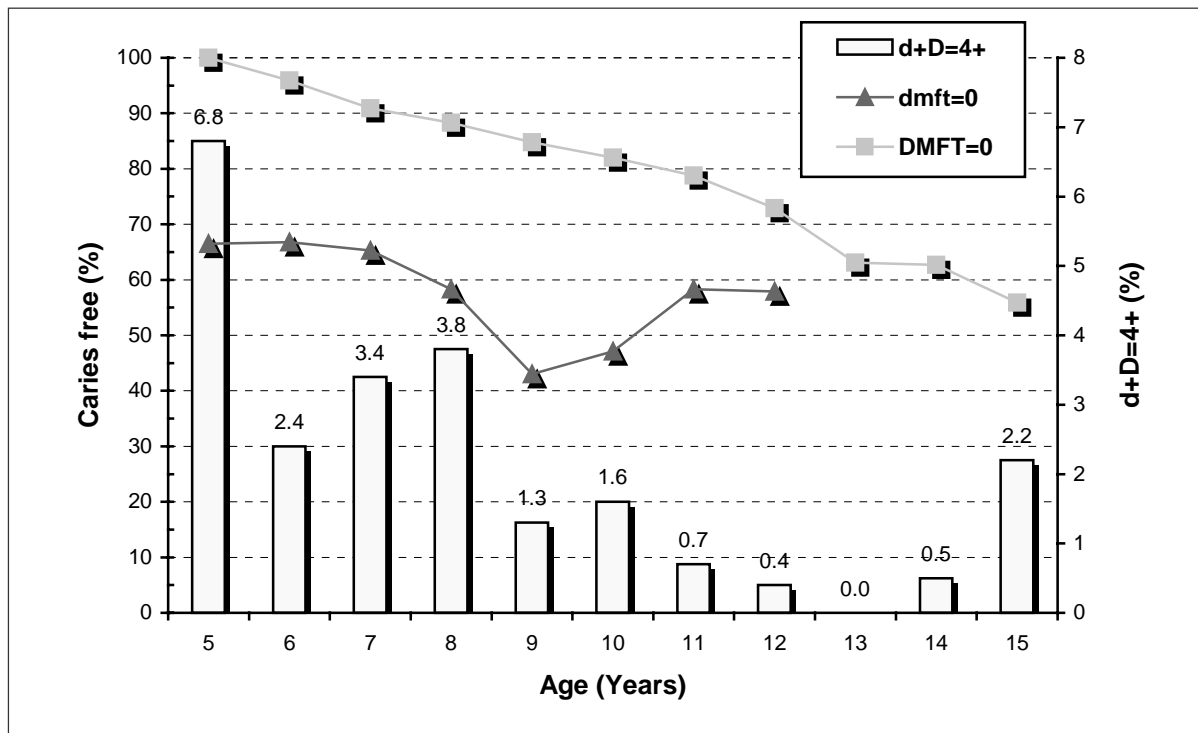
Age	Students	0-6	7-12	13-18	19-24	25+	Months since last examination	
		months	months	months	months	months	mean	SD
	<i>n</i>	%	%	%	%	%		
≤3	23	25.1	7.1*	63.8	4.0*	0.0	12.39*	5.23*
4	59	5.4*	43.1	40.5	11.0	0.0	12.73	4.47*
5	132	8.1	16.2	56.2	18.7	0.8*	15.02	4.62
6	201	4.8	24.9	54.4	10.8	5.0	15.24	5.86
7	221	1.6*	30.2	40.6	21.7	5.9	15.58	5.79
8	226	4.2	23.9	43.9	21.6	6.4	16.17	6.61
9	266	3.6	13.7	55.9	22.1	4.8	16.42	5.64
10	256	2.4*	15.3	56.0	17.6	8.7	16.63	5.72
11	333	1.4*	11.8	55.2	24.4	7.2	17.57	5.85
12	420	1.2*	11.5	57.1	24.8	5.4	17.09	4.86
13	307	0.9*	7.7	63.7	19.8	7.9	17.42	5.59
14	260	0.5*	10.2	49.3	26.8	13.1	18.65	6.60
15	237	2.0*	13.4	44.7	27.2	12.7	18.13	6.88
16	182	1.0*	9.2	51.5	24.3	13.9	19.63	8.38
≥17	126	1.3*	11.0	51.8	23.6	12.2	18.45	6.37

* relative standard error ≥ 40%

Summary of dental disease

Figure 4 presents data contained in Tables 4, 7 and 9 to summarise the extent of dental disease present in the sample for 1998.

Figure 4: Percentage of children with dmft=0, DMFT=0 and d+D=4+



Caries experience by geographical location

Table 13 presents caries experience data for each of the Statistical Divisions and Subdivisions used in this report. Considerable variation can be seen in caries experience for both selected age-groups across geographical areas. Among 5- and 6-year-old children, mean dmft scores in the deciduous dentition ranged from 0.55 in Western Adelaide to 2.46 in Murray Lands. The percentage of children with dmft=0 was highest in Western Adelaide (80.1%) and lowest in the Northern (36.5%) and Murray Lands (36.6%) districts. Among 12-year-old children, Murray Lands again had the highest mean DMFT score (1.62) and the lowest percentage of children with DMFT=0 (55.2%). The lowest mean DMFT score among 12-year-olds was in Eastern Adelaide (mean = 0.31) which also had the highest percentage of children with DMFT=0 (79.8%)

Table 13: Caries experience for 5-6-year-old and 12-year-old children by Statistical District

	5-6-year-olds				12-year-olds			
	Number	dmft	dmft=0		Number	DMFT	DMFT=0	
	<i>n</i>	Mean	SD	%	<i>n</i>	Mean	SD	%
Adelaide (Northern)	93	1.25	2.16	67.3	116	0.45	0.95	75.2
Adelaide (Eastern)	36	1.02	2.58	75.2	53	0.31	0.68	79.8
Adelaide (Southern)	71	0.78	1.73	72.8	91	0.41	0.88	76.2
Adelaide (Western)	37	0.55	1.49	80.1	51	0.54	1.17	75.1
Outer Adelaide	32	2.00	2.87	52.1	47	0.67	1.55	75.2
Yorke & Lower North	12	1.16	1.41	52.4	16	0.87	1.24	57.2
Murray Lands	19	2.46	2.61	36.6	25	1.08	1.62	55.2
South East	7	0.60	1.00	69.8	22	0.72	1.00	57.5
Eyre	14	0.88	1.36	60.3	9	0.59	1.03	68.7
Northern	14	2.18	2.37	36.5	28	0.42	0.55	60.3