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The University of Adelaide

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Purpose of this report

Information listed in the tables includes: the age and sex of children in the sample, their deciduous and permanent caries experience, frequency of fissure sealants, childrens' history of school dental service examinations, and calculus and debris indices. These data were collected during the 1996 calendar year from WA School Dental Service patients by dental therapists and dentists. A random sampling procedure was used to select one in 13 patients. This was achieved by selecting those children whose birthday was on the 29th, 30th or 31st day of any month. Where children had an unknown date of birth, one in 13 of their records were sampled. Consequently, the data constitute a simple random sample and no statistical weighting has been applied in their analysis.

The following sections briefly describe each table and provide a simple summary statement highlighting differences between the 1996 and 1995 data. It is necessary to be cautious in drawing inferences concerning changes between the years. *Moreover, no formal hypothesis tests have been undertaken and descriptions of difference between years are intended as a guide to the reader, rather than an evaluation of trends.*

Demographic composition of the sample

The majority of children in the sample (78.0 per cent) were aged between 5 and 12 years inclusive, with approximately equivalent numbers in individual ages within this range (see Table 1). However, children aged up to 16 years, or less than 5 years were also represented in substantial numbers. Females and males were represented in similar proportions in all ages.

The distribution of the sample is closely related to the main target groups of children served by the school dental service in WA. The distribution also illustrates that the sample is representative of primary school aged children, rather than all children in the WA. Moreover, the relatively small numbers of children aged either less than five years or greater than 16 years, result in less reliability of computed statistics for those ages, and they have been suppressed where indicated in the following tables. It is also important to note that those children who are outside the main school dental service target groups may differ on key characteristics and are likely to be less representative of their respective age groups in the WA population.

Changes since 1995

The numbers of children and representation of key age groups in both years are similar.

Deciduous teeth: age-specific caries experience

The mean number of clinically detectable decayed teeth among children aged 5 to 10 years old declined steadily with age from 0.82 to 0.35 (see Table 2). In contrast, mean dmft increased to 1.63 for 9 year-old children before declining. These findings must be interpreted in view of the exfoliation of deciduous teeth as children grow older.

The percentage of caries experience due to decay (d/dmft) shows an age-associated decline, reducing from 92.7 per cent for children less than 5 years old to 28.4 per cent among 10 year-olds. By comparison, the percentage of caries-free children (% dmft=0) shows a more modest reduction from 73.7 per cent among children up to 5 years old to 46.7 per cent among 9 year-olds.

Changes since 1995

Most changes in mean numbers of deciduous teeth with caries experience among 5 to 9 year-olds between 1995 and 1996 were small, and do not represent clear trends.

Permanent teeth: age-specific caries experience

As can be seen in Table 3, the mean number of clinically decayed permanent teeth was consistently smaller than the mean number of decayed deciduous teeth. Clinically detectable decay increased with increasing age. Similarly, the mean DMFT increased quite consistently across age groups, from less than 0.1 for children up to 5 years of age to 2.49 for children aged 16 years or greater. The percentage of DMFT due to decay (D/DMFT) and the percentage caries free (DMFT=0) declined across age groups. The mean DMFT score for 12 year-old children was 0.99. It is noteworthy that more than 57.4 per cent of children in age groups up to 12 years of age were caries free.

Changes since 1995

There have been small increases in the decayed component of the DMFT index for younger children, which was reflected in reasonably consistent increases in the D/DMFT ratio for most ages between 1995 and 1996. The percentage of children with DMFT=0 has not changed systematically.

All teeth: age-specific experience

Untreated clinically detectable caries in the combined deciduous and permanent dentitions existed for between 20.9 and 34.1 per cent of children in all age ranges (see Table 4). The greatest likelihood of untreated decay occurred for 8 year-olds. Based on observations from previous tables, much of this untreated decay can be attributed to the deciduous dentition. Furthermore, it is noteworthy that the most extensive levels of untreated decay (4 or more deciduous or permanent teeth) occur in the younger age groups, with more than 7 per cent of children aged 5 years or less being affected to this extent. This age distribution suggests that the greatest contribution comes from the deciduous dentition.

While more than 95 per cent of children aged 5 to 12 years had no deciduous or permanent teeth missing due to caries, smaller percentages avoid receiving fillings, for which there is a consistent age-associated increase in children up to 10 years of age (51.3% with 1+ fillings). There is a decline in the percentage of children with no caries experience in either deciduous or permanent dentition, from 72.4 per cent for children aged less than 5 to 37.6 per cent at age 10. For both $f+F=0$ and $dmft+DMFT=0$ there is an increase from age 10 to age 12, with a subsequent decline in percentages. The data relating to all teeth demonstrate that more than one third of children survive primary school with no experience of dental caries.

Changes since 1995

The earlier observations of minor changes in deciduous and permanent caries experience carry through to this table which showed no systematic changes in the percentages of children with $d+D=4+$ or $dmft+DMFT=0$ compared with the 1995 data.

Fissure sealants: age-specific experience

The age-specific experience with fissure sealants is shown in Table 5. Fissure sealants are most prevalent in children aged 14 years or over. There is evidence of preferential use of fissure sealants among those with caries experience, indicated by the percentage of children with fissure sealants among those with caries experience compared to those with no caries experience.

Changes since 1995

The mean number of fissure sealants in 1996 was lower than that observed in 1995 among those aged 5 to 12 years. The percentage of children with fissure sealants is greater among those with caries experience than those without, and the differential between the two groups appears slightly greater across years.

School Dental Service examinations

Table 6 demonstrates that the great majority (over 90 per cent) of children 7 years of age or older have previously received examinations within the School Dental Service. The figures for children up to 5 years of age indicate that even among preschool children, a small percentage receive repeated episodes of care from the School Dental Service.

Changes since 1995

There are only small differences between 1995 and 1996 in the frequency of first examinations. The trend is for the percentage of children having a first examination to be slightly higher across most ages in 1996 than in 1995.

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

Figure 1 presents data contained in tables 3, 4 and 5 to summarise the extent of dental health (represented by percentage with no caries experience) and the extent of more extensive clinically detectable untreated decay.

TABLES

Table 1: Demographic composition of the sample

Data for the Child Dental Health Survey are collected from a stratified random sample of children in all Australian States and Territories. The sampling procedure selects a constant proportion of children for whom date of birth is known by selecting only those children born on particular dates. Within Western Australia, the sampling ratio for children whose date of birth is known is 1:13.

Age (years)	Number of records processed			Persons
	Males	Females	Unknown	
2	1	2	0	3
3	12	9	0	21
4	211	218	0	429
5	490	438	0	928
6	515	482	0	997
7	495	513	0	1008
8	539	526	0	1065
9	511	491	0	1002
10	494	497	0	991
11	494	493	0	987
12	464	471	0	935
13	359	348	0	707
14	303	306	0	609
15	230	232	0	462
16	114	107	0	221
17	4	4	0	8
Total	5236	5137	0	10373

Table 2: Deciduous teeth: age-specific caries experience¹

This table uses State-wide data to describe the dmft index and its components for individual (year of birth) ages. Where children received more than one examination, the information derived from examinations other than the first is excluded.

Age (years)	No. of children in sample	Decayed		dmft		d/dmft	Children with dmft=0
		mean	sd	mean	sd	%	%
<=4	453	.72	1.68	.76	1.74	92.7	73.7
5	928	.82	1.89	1.14	2.28	72.8	64.0
6	997	.69	1.51	1.30	2.23	54.3	58.3
7	1008	.57	1.20	1.51	2.25	40.0	52.6
8	1065	.51	1.12	1.60	2.13	33.6	47.6
9	1002	.39	.84	1.63	2.10	28.2	46.7
10	991	.35	.83	1.37	1.91	28.4	50.7

Table 3: Permanent teeth: Age-specific caries experience²

This table uses State-wide data to describe the DMFT index and its components for individual (year of birth) ages. Where children received more than one examination the information derived from examinations other than the first is excluded. 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 are statistically unreliable.

Age (years)	No. of children in sample	Decayed		DMFT		D/DMFT	Children with DMFT=0
		mean	sd	mean	sd	%	%
5	928	0.01*	0.14*	0.01*	0.14*	85.7	99.2
6	997	0.09	0.48	0.11	0.61	86.4	94.1
7	1008	0.13	0.46	0.19	0.57	76.1	88.0
8	1065	0.17	0.53	0.28	0.69	59.3	81.3
9	1002	0.14	0.48	0.35	0.81	42.1	78.4
10	991	0.16	0.53	0.53	0.97	30.1	70.7
11	987	0.20	0.55	0.70	1.50	31.4	66.1
12	935	0.28	1.05	0.99	1.75	29.6	57.4
13	707	0.37	0.84	1.41	1.96	29.3	45.8
14	609	0.35	0.84	1.74	2.48	24.4	42.5
15	462	0.39	1.10	2.21	2.50	18.6	35.7
16+	229	0.49	1.82	2.49	3.40	22.1	30.6

¹ Legend d - decayed deciduous teeth
dmft - decayed, missing or filled deciduous teeth
sd - standard deviation

² Legend D - decayed permanent teeth
DMFT - decayed, missing or filled permanent teeth

Table 4: All teeth: age-specific experience¹

This table uses State-wide data to describe the combined dmft and DMFT indices and their components for individual (year of birth) ages. Where children received more than one examination the information derived from examinations other than the first is excluded. 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 are statistically unreliable.

Age (years)	No. of children in sample	% of children with d+D=					% of children with		
		0	1	2	3	4+	m+M=0	f+F=0	dmft+DMFT=0
<=4	453	74.6	8.4	7.3	1.5	8.2	98.9	96.2	72.4
5	928	69.1	12.8	8.8	2.2	7.1	98.6	87.2	63.4
6	997	68.6	12.8	8.0	3.9	6.6	98.6	75.1	56.2
7	1008	66.6	16.1	7.8	5.0	4.6	99.1	63.3	49.0
8	1065	65.9	18.0	7.5	4.5	4.0	98.8	55.6	42.1
9	1002	70.0	16.3	7.7	4.0	2.1	99.1	50.5	40.2
10	991	70.5	17.5	7.2	2.6	2.2	99.2	48.7	37.6
11	987	75.8	14.1	6.8	2.0	1.3	98.6	55.8	46.6
12	935	79.1	13.5	4.4	1.9	1.1	95.9	59.9	48.0
13	707	76.0	14.4	6.5	1.6	1.6	93.6	53.9	41.6
14	609	77.7	14.4	3.9	2.3	1.6	90.0	54.8	41.5
15	462	79.0	12.1	5.2	1.7	1.9	87.4	47.0	35.1
16+	229	76.0	14.8	3.1	4.8	1.3*	84.3	46.7	30.1

¹ Legend d - decayed deciduous teeth
D - decayed permanent teeth
m - deciduous teeth missing due to caries
M - permanent teeth missing due to caries
f - deciduous teeth restored due to caries
F - permanent teeth restored due to caries
dmft - decayed, missing or filled deciduous teeth
DMFT - decayed, missing or filled permanent teeth

Table 5: Fissure sealants: age-specific experience¹

This table uses State-wide data to describe the distribution of fissure sealants for individual (year of birth) ages, along with the caries experience of those who have fissure sealants and those who do not. Where children received more than one examination the information derived from examinations other than the first is excluded.

Age (years)	No. of children in sample	No. of sealants		Children with DMFT=0		Children with DMFT=1+	
		mean	sd	number	% with F/S=1+	number	% with F/S=1+
6	997	.02	.22	938	.7	59	3.4
7	1008	.14	.55	887	7.4	121	13.2
8	1065	.32	.84	866	14.2	199	22.6
9	1002	.33	.82	786	16.8	216	19.4
10	991	.29	.84	701	14.7	290	14.5
11	987	.22	.66	652	10.4	335	17.6
12	935	.24	.73	537	10.4	398	15.8
13	707	.30	.82	324	10.2	383	20.9
14	609	.38	1.12	259	16.2	350	21.1
15	462	.52	1.22	165	18.2	297	28.6
16+	229	.33	.79	70	12.9	159	22.6

¹ Legend DMFT - decayed, missing or filled permanent teeth
 F/S - number of fissure sealed teeth
 sd - standard deviation

Table 6: School Dental Service examinations: age-specific distribution

This table describes the percentage distribution of children who have received initial and subsequent dental examinations in the School Dental Service. Data from all examinations of children who were examined during the report period are included in this table.

Age (years)	No. of children in sample	Has prior examination	First examination
<=4	453	8.8	91.2
5	928	34.2	65.8
6	997	81.2	18.8
7	1008	90.2	9.8
8	1065	90.4	9.6
9	1002	90.9	9.1
10	991	91.0	9.0
11	987	90.5	9.5
12	935	94.0	6.0
13	707	93.9	6.1
14	609	94.7	5.3
15	462	93.9	6.1
16+	229	94.3	5.7

FIGURES

Figure 1: Percentage of children with dmft=0, DMFT=0 and d+D=4+

