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The Child Dental Health Survey Australian Capital Territory January - December 1991

by

The AIHW Dental Statistics
and Research Unit

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The AIHW Dental Statistics and Research Unit (DSRU) is an external unit of the Australian Institute of Health and Welfare and was established in 1988 at The University of Adelaide. The DSRU was funded to improve the range and quality of dental statistics and research on the dental workforce, dental health status, dental practices and use of dental services.

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THE CHILD DENTAL HEALTH SURVEY - AUSTRALIAN CAPITAL TERRITORY 1991

Purpose of this report

This report is part of the annual series providing descriptive statistics concerning child dental health in the Australian Capital Territory. The report contains tables and figures. 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, immediate treatment needs and children's history of school dental service examinations. The figures combine and summarize information from four of the tables.

These data were collected during the 1991 calendar year from patients of the ACT School Dental Service by dental therapists and dentists. A random sampling procedure was used to select approximately one in two (1:2.5) patients. This was achieved by selecting those children whose birthday was between the 1st and 12th (inclusive) of any month. Provision was made for inclusion and numerical weighting of data from children whose date of birth was unknown.

The following sections briefly describe each table and provide a simple, summary statement highlighting differences between the 1991 and 1990 findings. However, 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.

Table 1: Demographic composition of the sample

The great majority of children in the sample (94 per cent) were aged between 5 and 11 years inclusive, with approximately equivalent numbers in individual ages within this range. Twelve year-olds were less than half as likely as those aged 5-11 to be in the sample, while 4-year-olds and those aged 13+ were infrequent. Males and females were represented in approximately equal proportions.

This distribution of the sample is closely related to the main target groups of children served by the School Dental Service in the ACT and emphasizes the sample is representative of primary school aged children served by the School Dental Service, rather than all children in the ACT. The small numbers of children aged 4 and 13+ are likely to be less representative of ACT children in general, and their small numbers contribute to imprecision in some age-specific statistics contained in the following tables.

Changes since 1990

The absolute numbers of children in each age groups did not differ by more than 100 between the two years, and the total number of children increased only slightly (189 children) in 1991.. During 1991 there were relatively more females, creating a more even gender balance than 1990.

Table 3: Deciduous teeth: age-specific prevalence

There was little variation in the mean number of decayed (d) teeth among children aged 5 to 7 years (0.58 to 0.71). However, the magnitude of variation in mean dmft in this age range was greater (0.93 to 1.61), and the mean number increased in older age groups. The mean d and dmft of 4-year-olds was exceptionally high, although those children probably differ in key characteristics from the child population in the ACT. In contrast, those aged 5 to 9 years are likely to be more representative of the ACT population in that age range.

The percentage of caries experience due to decay (d/dmft) showed an age-associated decline, halving from 78.6 per cent among 5-year-olds to 37.3 per cent among 10-year-olds. This is the strongest and most consistent age-associated effect for deciduous teeth. By comparison, the percentage of caries-free children (% dmft=0) showed a more modest reduction from 69.6 per cent among 5-year-olds to 49.7 per cent among 9-year-olds. The percentage of caries free children therefore mirrors the mean dmft prevalence.

Changes since 1990

Most changes in deciduous caries experience among 5- to 9-year-olds between 1990 and 1991 were small, with means varying by less than 0.1 in most instances. Changes in percentages (d/dmft and dmft=0) were not consistent among ages and do not indicate any clear trends. Statistics for 4-year-olds generally show a worsening of their dental health status, but it should be re-emphasized that they are a small and probably non-representative group.

Table 4: Permanent teeth: age-specific prevalence

The mean number of decayed permanent teeth was smaller than the mean number of decayed deciduous teeth and was relatively consistent across the range of 7 to 11 years (0.11 to 0.17 teeth). In contrast, the mean DMFT increased quite consistently across those age groups (0.16 to 0.62), and this is natural in a cumulative index such as DMFT. As a consequence, the percentage of DMFT due to decay (D/DMFT) and the percentage of caries free children (DMFT=0) declined across age groups. Age-specific D/DMFT percentages were higher than d/dmft percentages between the ages of five and nine. However this phenomenon is due largely to the very low DMFT values which are the denominators in D/DMFT and which drive the percentage upwards. It is noteworthy that more than 55 per cent of children aged 12 or less were caries free (DMFT=0).

Changes since 1990

Changes in the mean number of decayed permanent teeth are inconsequential, and in most ages the changes in mean DMFT were also small (less than 0.1 teeth). Twelve-year-olds were one group in which DMFT declined noticeably (1.03 to 0.91), and there was a corresponding increase in percentage caries free (DMFT=0). Although the magnitude of DMFT decline is small, this corresponds to the second successive year in which this key age group had a reduction. It was suggested in the 1990 report that the decline may have been related to an unexpectedly high figure in 1989. However the continued decline in 1991 may suggest that other factors are contributing to real reductions in this age group.

Table 5: All teeth: age-specific prevalence

Untreated caries in the combined deciduous and permanent dentitions (d+D=1, 2, 3 or 4+) existed for between 25 and 35 per cent of children in the age range 5 to 12 years. The greatest likelihood of untreated decay existed for 8-year-olds. However, the most extensive levels of

untreated decay ($d+D=4$ or more) occurred in the younger age groups, with seven per cent or more of children aged 6 years or less being affected to this extent. This age distribution suggests that the greatest contribution comes from the deciduous dentition.

More than 97 per cent of children had no deciduous or permanent teeth missing due to caries. Smaller percentages avoided fillings, and the percentage of children without fillings declined among older ages. There was a similar decline in the percentage of children with no caries experience in either deciduous or permanent dentition ($dmft+DMFT=0$), from 69.6 per cent at age five to 47.8 per cent at age 12. In other words, more than 40 per cent of children at any specific age had no dental caries experience.

Changes since 1990

In several age groups there were small increases (1 to 5 per cent) in the percentage of children with no decayed deciduous or permanent teeth, and corresponding reductions in the percentage with one decayed tooth. However in three of the ages within the range 5-12 years there were no changes. Twelve-year-old children were more likely to have no fillings ($f+F=0$) and no caries experience ($dmft+DMFT=0$) in 1991, and this observation is consistent with the changes in permanent caries experience described previously.

Table 6: Fissure sealants: age-specific prevalence

Fissure sealants were prevalent in children aged 7 to 12 years, and at those ages the mean number of fissure sealants was equal or equivalent to the mean DMFT. There is clear evidence of preferential use of fissure sealants among those with caries experience: the prevalence of fissure sealants among children aged 8 to 12 years with some caries experience ($DMFT=1+$) was between 10 and 20 per cent greater than the prevalence among those with no caries experience ($DMFT=0$).

Changes since 1990

In 1991, the mean number of fissure sealants was greater by 0.2 to 0.3 sealants per child within the range 8 to 12 years. Furthermore, the targeting of fissure sealants to children with caries experience appeared to continue, with greater temporal increases in the percentage of children with fissure sealants among those with DMFT of 1 or more.

Table 7: Immediate treatment needs

Immediate treatment needs for existing or imminent pain or infection were designated for fewer than three per cent of children in all age groups. The small number of children had very high deciduous caries experience. However, with these small numbers it is not possible to comment on changes since 1990.

Table 8: School Dental Service examinations

The left hand side of this table describes the percentage of children who are new patients (having had no previous dental examination) in the ACT School Dental service. As expected, the figure is highest for the youngest ages (6 years or less) with fewer than 10 per cent of those aged 8 years or more having had no previous examination. This pattern is expected, and indicates that most patients are enrolled during their early school years.

The right hand side of the table refers to children with previous examinations, and indicates

their distribution according to time since last dental examination. More than one third of children in all ages received examinations within 7 to 12 months of their previous examination, and slightly greater percentages occurred between 13 to 24 months. Very few children were re-examined within six months, or after two years.

Changes since 1990

There was a tendency towards shorter re-examination periods in 1991. There were increases, generally between 4 and 9 per cent, in the percentage of children receiving a re-examination within a 7 to 12 month period. Corresponding reductions were observed for the percentage of children re-examined within a 13 to 24 month period.

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

This figure presents data contained in tables 3, 4 and 5 to summarize the extent of dental health (represented by percentage with no caries experience) and the extent of more extensive untreated decay (represented by the percentage with d+D=4 or more).

Figure 2: Time since last dental examination

This figure draws on information from table 8, and selects 7- and 11-year-olds to demonstrate the variation in time since last examination.

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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. In Australian Capital Territory the sampling is 1:2.5. This ratio is achieved by systematically selecting every fifth record of data from all children examined in the School Dental Service. The following table describes the number of records processed from children in Australian Capital Territory.

State/Territory: **Australian Capital Territory**

Sampling Ratio: **1:2.5**

Data for period January-December 1991

Date of Report: 31st August 1992

Age (years)	UNWEIGHTED NUMBER OF RECORDS PROCESSED						WEIGHTED NUMBER OF CHILDREN IN SAMPLE ¹		
	TYPE OF SAMPLING								
	Known date of birth			Age only known			Males	Females	Persons
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
≤4	49	38	87	0	0	0	49	38	87
5	400	385	785	0	1	1	400	386	786
6	515	483	998	1	2	3	516	484	1000
7	554	517	1071	1	3	4	555	519	1074
8	539	519	1058	1	1	2	540	520	1060
9	495	525	1020	0	0	0	495	525	1021
10	479	489	968	0	0	0	479	489	969
11	440	475	915	1	0	1	441	475	916
12	208	149	357	0	0	0	208	149	357
13	11	7	18	0	0	0	11	7	18
14	3	1	4	0	0	0	3	1	4
≥15	1	2	3	0	0	0	1	2	3
Total	3694	3590	7284	4	7	11	3699	3596	7295

¹ Processed records are weighted to reflect the sampling scheme. Records from children with a known date of birth are weighted up, while records from children for whom age only is known are weighted down. The sum of the weighted records is equivalent to the number of children sampled for the survey. The number of cases have been rounded to the nearest integer.

TABLE 2: COUNTRY OF BIRTH (INCLUDING ABORIGINALITY)

These data were not collected in Australian Capital Territory during the period January-December 1991.

TABLE 3: DECIDUOUS TEETH: AGE-SPECIFIC PREVALENCE¹

This table uses Statewide data to describe the dmft index and its components for individual (year of birth) ages. Indices are calculated from data collected over a 12 month period. Where children received more than one examination during this period, 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.

State/Territory: **Australian Capital Territory**

Sampling ratio: **1:2.5**

Data for period January-December 1991

Date of report: 31st August 1992

Age (years)	Number of children in sample	decayed		dmft		d/dmf %	Children with dmft=0 %
		mean	sd	mean	sd		
4	87	1.40	2.61	1.84	3.05	76.8	58.6
5	786	0.71	1.60	0.93	1.99	78.6	69.6
6	1000	0.77	1.58	1.14	2.11	69.8	63.3
7	1074	0.60	1.34	1.33	2.20	47.2	56.5
8	1060	0.67	1.23	1.60	2.31	44.0	52.4
9	1021	0.58	1.14	1.61	2.19	37.3	49.7
10	969	0.43	0.95	1.33	1.89	33.2	54.3

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

TABLE 4: PERMANENT TEETH: AGE-SPECIFIC PREVALENCE¹

This table uses Statewide data to describe the DMFT index and its components for individual (year of birth) ages. Indices are calculated from data collected over a 12 month period. Where children received more than one examination during this period, 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.

State/Territory: **Australian Capital Territory**

Sampling ratio: **1:2.5**

Data for period **January-December 1991**

Date of report: **31st August 1992**

Age (years)	Number of children in sample	DECAYED		DMFT		D/DMFT %	Children with DMFT=0 %
		mean	sd	mean	sd		
6	1000	0.04	0.27	0.04	0.29	94.0	97.5
7	1074	0.11	0.41	0.16	0.53	68.6	89.4
8	1060	0.12	0.46	0.28	0.73	45.3	83.8
9	1021	0.14	0.49	0.32	0.75	42.8	79.9
10	969	0.17	0.54	0.54	0.99	30.1	70.4
11	916	0.17	0.53	0.62	1.09	27.6	66.5
12	357	0.30	1.10	0.91	1.56	30.5	57.4
13	18	0.72	1.18	1.50	1.65	40.2	38.9
14	4	*	*	*	*	*	*
≥15	3	*	*	*	*	57.1	66.7

¹ Legend: D - decayed permanent teeth
DMFT - decayed, missing or filled permanent teeth
sd - standard deviation

TABLE 5: ALL TEETH: AGE-SPECIFIC PREVALENCE¹

This table uses Statewide data to describe the combined dmft and DMFT indices and their components for individual (year of birth) ages. Indices are calculated from data collected over a 12 month period. Where children received more than one examination during this period, 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.

State/Territory: **Australian Capital Territory**

Sampling ratio: **1:2.5**

Data for period **January-December 1991**

Date of report: **31st August 1992**

Age (years)	Number 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	87	63.2	10.3	*	6.9	14.9	98.9	87.4	58.6
5	786	73.6	9.7	5.7	4.3	6.6	98.7	91.7	69.6
6	1000	68.7	12.4	7.8	4.0	7.0	98.8	84.5	62.7
7	1074	68.0	14.0	9.1	4.6	4.3	98.1	69.6	53.2
8	1060	64.4	15.7	8.6	5.5	5.9	97.9	62.0	47.7
9	1021	65.8	16.4	8.2	4.4	5.2	98.8	55.7	43.9
10	969	70.2	14.9	7.2	3.7	3.9	98.0	52.3	42.9
11	916	74.9	14.4	6.4	2.4	1.9	99.1	60.4	49.5
12	357	74.5	14.8	6.7	2.8	*	97.5	58.3	47.9
13	18	61.1	*	*	*	*	94.4	33.3	27.8
14	4	75.0	*	0.0	0.0	0.0	100	75.0	*
≥15	3	66.7	0.0	0.0	0.0	*	100	66.7	66.7

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 6: FISSURE SEALANTS: AGE-SPECIFIC PREVALENCE¹

This table uses Statewide 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. Indices are calculated from data collected over a 12 month period. Where children received more than one examination during this period, 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.

State/Territory: **Australian Capital Territory**

Sampling ratio: **1:2.5**

Data for period **January-December 1991**

Date of report: **31st August 1992**

Age (years)	Number of children in sample	Number of sealants		CHILDREN WITH DMFT=0		CHILDREN WITH DMFT=1+	
		mean	sd	number	% with F/S=1+	number	% with F/S=1+
6	1000	0.07	0.51	975	2.0	25	8.0
7	1074	0.27	0.90	959	8.1	114	26.3
8	1060	0.63	1.31	889	19.1	171	34.5
9	1021	0.73	1.37	816	21.3	205	42.4
10	969	0.78	1.47	682	25.1	287	35.9
11	916	0.81	1.54	610	23.6	307	37.0
12	357	0.91	1.82	205	26.3	152	38.8
13	18	*	*	7	28.6	11	*
14	4	*	*	2	0.0	2	*
15	3	-	-	2	0.0	1	0.0

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

TABLE 7: IMMEDIATE TREATMENT NEEDS: AGE-SPECIFIC DISTRIBUTION¹

This table, based on Statewide data, describes the number and proportion of children in immediate need of dental treatment. This classification is accorded to children who have, or who are likely to develop within four weeks, oral pain or infection. The dental caries experience of this group of children is also described. Indices are calculated from data collected over a 12 month period. Where children received more than one examination during this period, 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.

State/Territory: **Australian Capital Territory**

Sampling ratio: **1:2.5**

Data for period **January-December 1991**

Date of report: **31st August 1992**

CHILDREN IN NEED OF IMMEDIATE TREATMENT												
Age (years)	Number of children in sample		% of all children	dmft		DMFT		% with d+D=				
	sample	No.		mean	sd	mean	sd	0	1	2	3	4+
4	87	5	*	5.00	3.08	-	-	*	*	0.0	0.0	*
5	786	9	1.1	2.56	2.07	-	-	*	*	*	*	*
6	1000	8	0.8	3.62	3.02	*	*	0.0	50.0	*	0.0	*
7	1074	20	1.9	3.95	4.19	*	*	*	25.0	30.0	*	*
8	1060	16	1.5	3.31	2.47	*	*	*	37.5	*	*	*
9	1021	23	2.3	4.26	3.02	0.65	0.93	*	*	26.1	*	30.4
10	969	9	0.9	2.78	2.59	*	*	*	*	*	*	*
11	916	10	1.1	1.60	1.65	1.40	1.65	*	40.0	*	0.0	*
12	357	9	2.5	*	*	*	*	55.6	*	*	*	0.0
13	18	1	*	-	-	4.00	-	0.0	0.0	0.0	100	0.0
14	4	0	0.0	-	-	-	-	-	-	-	-	-
≥15	3	1	*	1.00	-	7.00	-	0.0	0.0	0.0	0.0	100

¹ Legend: dmft - number of decayed, missing or filled deciduous teeth
 DMFT - number of decayed, missing or filled permanent teeth
 d - number of decayed deciduous teeth
 D - number of decayed permanent teeth

**TABLE 8: 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; percentage estimates denoted with an asterisk (*) are those in which the relative standard error exceeds 40 per cent, and population estimates of these percentages are statistically unreliable.

State/Territory: **Australian Capital Territory**

Sampling ratio: **1:2.5**

Data for period **January-December 1991**

Date of report: **31st August 1992**

Age (years)	Number of children examined	Previous examination in School Dental Service (%)			CHILDREN WITH PREVIOUS EXAMINATION			
		No	Yes	Unknown	Months since last examination ¹ (%)			
					0-6	7-12	13-24	25+
4	87	74.7	9.2	16.1	*	*	50.0	0.0
5	797	80.9	7.0	12.1	17.9	62.5	17.9	*
6	1021	34.5	48.8	16.8	5.8	50.1	43.2	*
7	1096	9.4	77.4	13.2	3.0	39.9	54.4	2.7
8	1100	5.0	77.9	17.1	3.0	43.0	50.1	3.9
9	1049	3.3	80.5	16.1	3.1	42.9	48.0	6.0
10	984	3.7	82.1	14.2	3.8	39.7	49.3	7.2
11	935	2.9	83.4	13.7	3.5	40.4	50.3	5.8
12	374	2.4	85.0	12.6	*	39.6	48.7	10.7
13	18	0.0	33.3	66.7	0.0	*	*	*
14	4	0.0	0.0	100	-	-	-	-
≥15	3	0.0	66.7	*	0.0	*	*	0.0

¹ Excludes those with no previous examination and where the date of previous examination is unknown.

FIGURE 1: PERCENTAGE OF CHILDREN WITH dmft=0, DMFT=0 and d+D=0

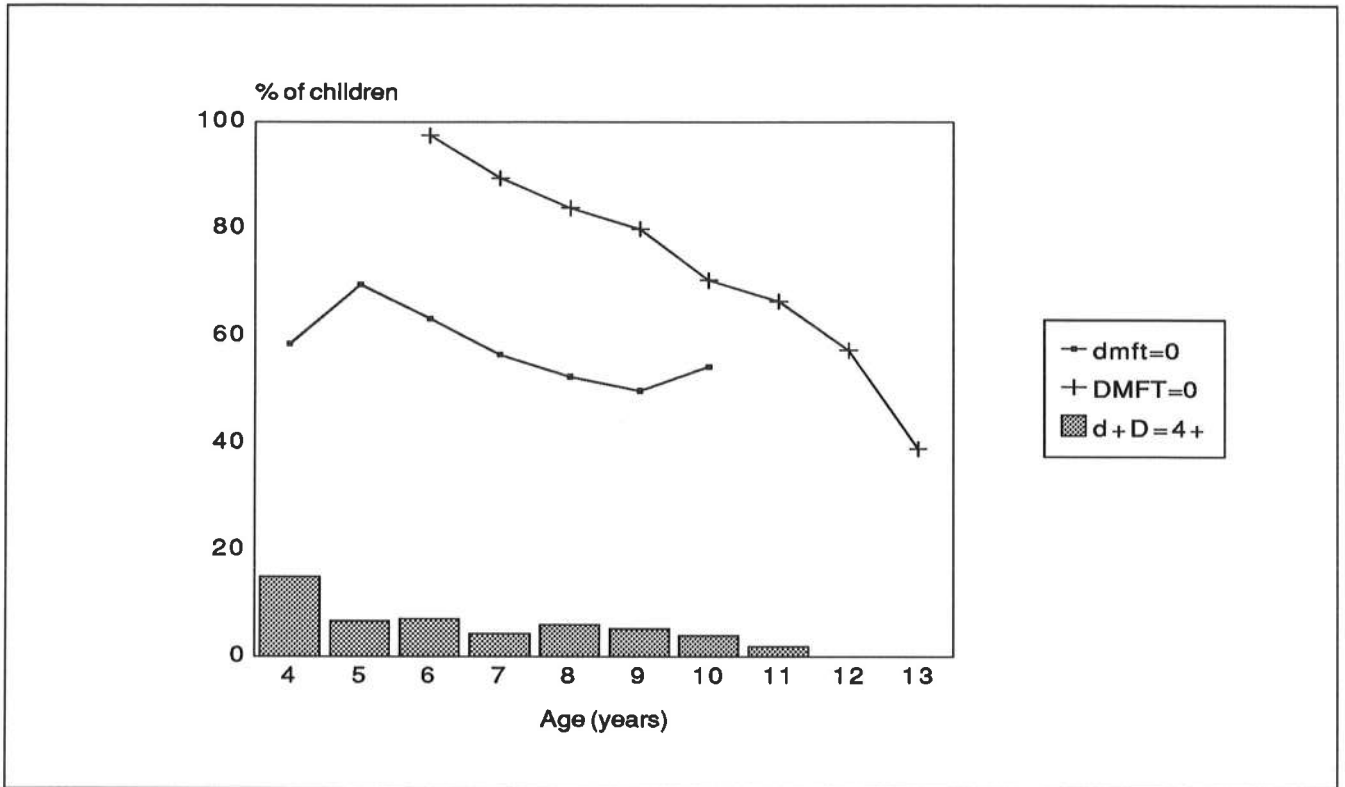


FIGURE 2: TIME SINCE LAST DENTAL EXAMINATION

