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DMFT LEVELS AT 12 YEARS

1995

**Oral
Health
Programme**

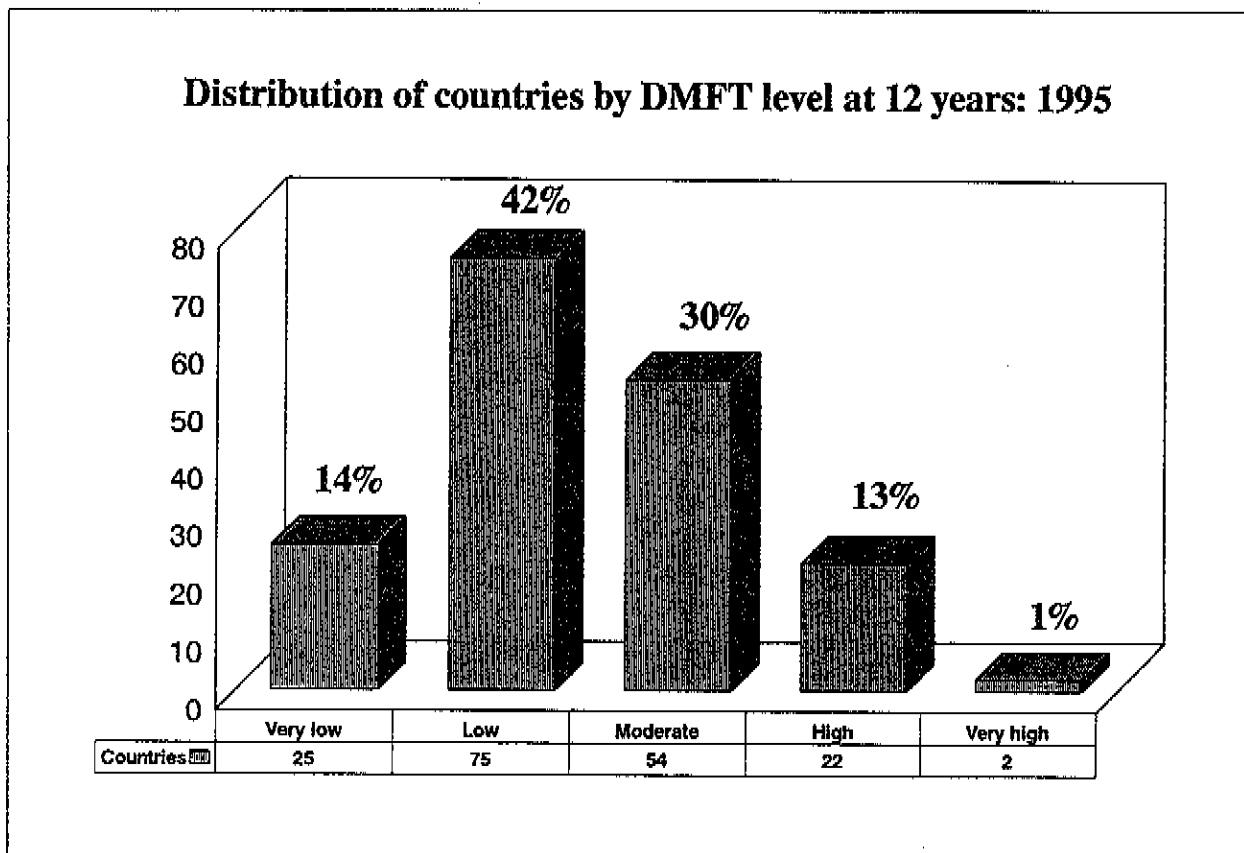


World Health Organization

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Basic Global Indicator of Oral Health 2000

In May 1981, the World Health Assembly adopted as the first global indicator of oral health status an average of not more than three decayed, missing, filled permanent teeth at the age of 12 years by the year 2000, the goal developed jointly by the WHO Oral Health Programme and the International Dental Federation. Since that time caries levels have been monitored by WHO and this document provides the most recent information.



	DMFT Range
Very low	0.0 - 1.1
Low	1.2 - 2.6
Moderate	2.7 - 4.4
High	4.5 - 6.5
Very High	6.6 >

DMFT LEVELS AT AGE 12 BY COUNTRY

COUNTRY	MOST RECENT DATA		SEVERITY LEVEL
	YEAR	DMFT	
Afghanistan	1985-91	3.1-3.8	moderate
Albania	1990	2.8	moderate
Algeria	1987	2.3	low
Angola	1981	2.7	moderate
Anguilla	1991	2.5	low
Argentina	1987	3.4	moderate
Armenia	1987	2.4	low
Australia	1990	1.4	low
Austria	1990	4.2	moderate
Bahamas	1981	1.6	low
Bahrain	1986	1.3	low
Bangladesh	1990	3.5	moderate
Barbados	1983	4.4	moderate
Belarus	1990	3.3	moderate
Belgium	1991	2.7	moderate
Belize	1979-83	4.0	moderate
Benin	1989-90	0.3-1.4	very low-low
Bhutan	1985	1.4	low
Bolivia	1992	1.2	low
Botswana	1981	0.5	very low
Brazil	1990	4.9	high
Brunei Darussalam	1987	4.9	high
Bulgaria	1990	3.5	moderate
Burkina Faso	1993	1.7	low
Burundi	1987-88	1.0	very low
Cambodia	1990	1.6	low
Cameroon	1988	1.5	low

Very low 0.0-1.1
 Low 1.2-2.6
 Moderate 2.7-4.4
 High 4.5-6.5
 Very high 6.6 >

DMFT LEVELS AT AGE 12 BY COUNTRY

COUNTRY	MOST RECENT DATA		SEVERITY LEVEL
	YEAR	DMFT	
Canada	1989-91	3.0-3.7	moderate
Cape Verde	1989	2.8	moderate
Cayman Islands	1989-90	4.6	high
Central African Republic	1986	4.1	moderate
Chile	1995	6.7	high
China	1987	0.7	very low
Colombia	1984	4.8	high
Cook Islands	1978	4.9	high
Costa Rica	1992	5.5	high
Côte d'Ivoire	1993	2.6	low
Cuba	1992	2.9	moderate
Cyprus	1992	2.1	low
Czech Republic	1987	3.3	moderate
Denmark	1992	1.3	low
Djibouti	1990	0.9	very low
Dominica	1989	2.5	low
Dominican Republic	1986	6.0	high
Ecuador	1988	4.9	high
Egypt	1991	1.2 ⁽¹⁾	low
El Salvador	1989	5.1	high
Estonia	1988	4.1	moderate
Ethiopia	1993	1.0	very low
Fiji	1986	2.8	moderate
Finland	1991	1.2	low
France	1993	2.1	low
French Polynesia	1986-88	3.2	moderate

(1) 12-15 years

Very low 0.0-1.1
 Low 1.2-2.6
 Moderate 2.7-4.4
 High 4.5-6.5
 Very high 6.6 >

DMFT LEVELS AT AGE 12 BY COUNTRY

COUNTRY	MOST RECENT DATA		SEVERITY LEVEL
	YEAR	DMFT	
Gambia	1989	1.6	low
Georgia	1986	2.4	low
Germany	1989	4.1	moderate
Ghana	1989-91	0.1-0.4	very low
Gibraltar	1991	1.6	low
Greece	1985	4.4	moderate
Grenada	1991	5.5	high
Guatemala	1988	2.4	low
Guinea-Bissau	1986	0.5	very low
Guyana	1983	2.7	moderate
Haiti	1983	3.2	moderate
Honduras	1987	6.4	high
Hong Kong	1986	1.5	low
Hungary	1991	4.3	moderate
Iceland	1990	3.4	moderate
India	1993	1.4-3.8	low-moderate
Indonesia	1990	1.8	low
Iran, Islamic Republic of	1991	2.3	low
Iraq	1990	1.1	very low
Ireland	1992	1.9	low
Israel	1989	3.0	moderate
Italy	1992	2.9	moderate
Jamaica	1984	6.7	very high
Japan	1993	3.6	moderate
Jordan	1991	1.7	low
Kazakhstan	1988	2.0	low

Very low 0.0-1.1
 Low 1.2-2.6
 Moderate 2.7-4.4
 High 4.5-6.5
 Very high 6.6 >

DMFT LEVELS AT AGE 12 BY COUNTRY

COUNTRY	MOST RECENT DATA		SEVERITY LEVEL
	YEAR	DMFT	
Kenya	1986	0.9-1.8	very low-low
Kiribati	1992	0.7	very low
Korea, Republic of	1991	3.0	moderate
Kuwait	1982	2.0	low
Kyrgyzstan	1973	3.1	moderate
Lao, Peoples Dem. Rep.	1991	1.9	low
Latvia	1993	5.7	high
Lebanon	1993	5.0	high
Lesotho	1991	0.4	very low
Liberia	1977	0.4	very low
Libyan Arab Jamahiriya	1982-83	1.6	low
Liechtenstein	1988	3.4	moderate
Lithuania	1986	3.9	moderate
Luxembourg	1990	3.0	moderate
Macao	1994	2.0	low
Madagascar	1992-93	3.1	moderate
Malawi	1992-94	0.6-0.8	very low
Malaysia	1981	3.9	moderate
Maldives	1984	2.1	low
Mali	1983	2.2	low
Malta	1986	1.6	low
Martinique	1988	6.3	high
Mauritania	1990	2.0	low
Mauritius	1993	4.9	high
Mexico	1991-92	2.5-5.1	low-high
Micronesia, Fed. States of	1984	2.1	low

Very low 0.0-1.1
 Low 1.2-2.6
 Moderate 2.7-4.4
 High 4.5-6.5
 Very high 6.6 >

DMFT LEVELS AT AGE 12 BY COUNTRY

COUNTRY	MOST RECENT DATA		SEVERITY LEVEL
	YEAR	DMFT	
Moldova, Republic of	1986	2.3	low
Mongolia	1976	1.4	low
Morocco	1989	1.8	low
Mozambique	1983	0.6-5.5	very low-high
Myanmar	1993	1.1	very low
Namibia	1991	1.2	low
Nepal	1983-86	0.2-2.1	very low-low
Netherlands	1991	1.7	low
New Caledonia	1991	4.4	moderate
New Zealand	1993	1.5	low
Nicaragua	1988	5.9	high
Niger	1992	1.5	low
Nigeria	1990	0.7	very low
Niue	1984	2.5	low
Norway	1991	2.3	low
Oman	1991	2.6	low
Pakistan	1991	0.9	very low
Panama	1989	4.2	moderate
Papua New Guinea	1978-83	1.5-2.4	low
Paraguay	1983	5.9	high
Peru	1990	7.0	very high
Phillipines	1987	5.5	high
Poland	1990	5.1	high
Portugal	1989	3.2	moderate
Reunion	1981	4.1	moderate
Romania	1992	4.0	moderate

Very low 0.0-1.1
Low 1.2-2.6
Moderate 2.7-4.4
High 4.5-6.5
Very high 6.6 >

DMFT LEVELS AT AGE 12 BY COUNTRY

COUNTRY	MOST RECENT DATA		SEVERITY LEVEL
	YEAR	DMFT	
Russian Federation	1991	3.5	moderate
Rwanda	1993	0.3	very low
Saint Kitts & Nevis	1979-83	5.5	high
Saint Lucia	1961	2.7	moderate
Saint Vincent & the Grenadines	1991	3.2	moderate
Samoa	1987	2.5	low
San Marino	1987	3.7	moderate
Saudi Arabia	1994	3.0	moderate
Senegal	1994	1.2	low
Sierra Leone	1990-93	0.4-1.0	very low
Singapore	1984	2.5	low
Slovakia	1987	3.6	moderate
Solomon Islands	1969	1.7	low
Somalia	1992	1.0	very low
South Africa	1988-89	1.8	low
Spain	1993	2.3	low
Sri Lanka	1983-84	1.9	low
Sudan	1988	1.8	low
Suriname	1978	4.9	high
Swaziland	1978	1.1	very low
Sweden	1990	2.0	low
Switzerland	1987-89	2.0	low
Syrian Arab Republic	1989	1.9	low
Tajikistan	1973	1.2	low
Tanzania, United Rep. of	1989-91	0.6	very low

Very low 0.0-1.1
 Low 1.2-2.6
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 Very high 6.6 >

DMFT LEVELS AT AGE 12 BY COUNTRY

COUNTRY	MOST RECENT DATA		SEVERITY LEVEL
	YEAR	DMFT	
Thailand	1989	1.5	low
Togo	1986	0.3	very low
Tonga	1986	1.0	very low
Trinidad & Tobago	1962	3.9	moderate
Tunisia	1994	1.3	low
Turkey	1987	2.7	moderate
Turkmenistan	1986-87	2.6	low
Tuvalu	1986	2.4	low
Uganda	1993	0.4	very low
Ukraine	1988	4.4	moderate
United Arab Emirates	1991	1.9	low
United Kingdom of Great Britain & N. Ireland	1993	1.4	low
United States of America	1986-87	1.8	low
Uruguay	1992	4.2	moderate
Uzbekistan	1988-90	2.8	moderate
Vanuatu	1991	1.2	low
Venezuela	1986	3.6	moderate
Viet Nam	1990	1.8	low
Yemen	1987-90	1.6-3.1	low-moderate
Zaire	1987-91	0.4-1.1	very low
Zambia	1982	2.3	low
Zimbabwe	1991	1.3	low

Very low 0.0-1.1
Low 1.2-2.6
Moderate 2.7-4.4
High 4.5-6.5
Very high 6.6 >

REFERENCES

- Afghanistan Leous, WHO/ORH Assignment Report, 1985
 Leous, WHO Mission Report, 1991
- Albania Beijeri, National Oral Health Survey, 1990
- Algeria WHO/ORH/J2/625/1987/Banabdelhafid
- Angola Pinto, WHO/STC Angola Report, 1981
- Anguilla WHO/ORH/J2/486/1991/Langmaid
- Argentina Programa Nacional de Estadísticas en Salud
- Armenia Kuzmina, WHO Collaborating Centre at Moscow Medical
 Stomatological Institute, 1992
- Australia The Child Dental Health Survey Australia, 1990, Dental Statistics &
 Research No. 2, Australian Institute of Health & Welfare, 1993
- Austria Geyer, Ministry of Health, 1990
- Bahamas WHO/ORH/J2/426/1981/Fine
- Bahrain WHO/ORH/J2/735/1986/Westwater
- Bangladesh Arvidson-Bufano & Holm, Trop. Dent. J. 13:81-6, 1990
- Barbados CAREC Surveillance Report Vol. 10, No. 10, 1984
- Belarus Kuzmina, WHO Collaborating Centre at Moscow Medical
 Stomatological Institute, 1992
- Belgium Boute, Vrije Universiteit, Brussels, 1991
- Belize CAREC Surveillance Report Vol. 10, No. 10, 1984
- Benin WHO/ORH/J2/337/1990/Dossou
- Bhutan WHO/ORH/J2/532/1985/Singh
- Bolivia WHO/ORH/J2/428/1992/Stoltz
- Botswana WHO/ORH/J2/325/1981/Condon
- Brazil WHO/ORH/J2/430/1990/Fritz
- Brunei Darussalam National Survey, data provided by WPRO
- Bulgaria Dinkova & Antanasov, Situation Analysis of Oral Health in Gabrovo
- Burkina Faso WHO/ORH/J2/386/1993/Tapsoba Hadissa
- Burundi Vecchiati, Trop. Dent. J., Tome XI, No. 1, March 1988
- Cambodia WHO/ORH/J2/833/1990/Durward
- Cameroon WHO/ORH/J2/329/1988/Vinther
- Canada Payette et al., Dépt. de Santé comm., Hôp. St. Luc, 1991
 WHO/ORH/J2/437/1991/Piedalue
- Cape Verde WHO/ORH/J2/365/1989/Ryckewaert
- Cayman Islands Reported by Chief Dental Officer, Cayman Islands, January 1990
- Central African Republic WHO/ORH/J2/330/1986/Daugherty
- Chile Valenzuela Bravo, CONSALUD, Santiago
- China National Survey, Ministry of Public Health, Beijing 1987
- Colombia Estudio Nacional de Salud, Morbilidad Oral, Instituto Nacional de
 Salud, Bogota
- Cook Islands WHO/ORH/J2/837/1978/Smith
- Costa Rica Data supplied by Ministry of Health, San José, 1994
- Côte d'Ivoire WHO/ORH/J2/347/1993/Boal
- Cuba Data supplied by PAHO, July 1993
- Cyprus Pilot survey in oral health for schoolchildren in Cyprus, Dental
 Services, Ministry of Health, 1992
- Czech Republic Institute of Dental Research, Prague
- Denmark Skak-Iversen, Department of Health, 1992

Djibouti	Ibrahim, Report to Regional Meeting on Strengthening Oral Health in Primary Health Care 1993. WHO-EM/ORH/57-E/L
Dominica	Leake et al. J. Canadian Dent. Assoc. 56(11):1025-8, Nov. 1990
Dominican Republic	Data supplied by PAHO, July 1993
Ecuador	Estudio Epidemiologico de Salud Bucal en Escolares Fiscales del Ecuador, Instituto de Recursos Odontologicos del Area Andina
Egypt	National Survey, Ministry of Health, 1991
El Salvador	WHO/ORH/J2/453/1989/Molina
Estonia	Kuzmina, WHO Collaborating Centre at Moscow Medical Stomatological Institute, 1992
Ethiopia	WHO/ORH/J2/338/Albergho & Agostini
Fiji	Ministry of Health, Suva
Finland	Report of National Board of Health, Helsinki
France	Reported by Union Française pour la Santé Bucco-Dentaire, 1993
French Polynesia	Howell, Service d'Hygiène Dentaire, 1986-88
Gambia	WHO/ORH/J2/343/1989/Gudmundsen
Georgia	Kuzmina, WHO Collaborating Centre at Moscow Medical Stomatologica Institute, 1992
Germany	National Oral Health Survey, Institute of German Dentists, 1989
Ghana	WHO/ORH/J2/344/1989/Quansah WHO/ORH/J2/344/1991/Thorpe et al.
Gibraltar	Morillo & Mitropolous, Caries Res., May-June 1992
Greece	WHO/ORH/J2/648/1985/Athanassouli
Grenada	Aponte-Merced et al., Oral Health Survey, 1991
Guatemala	McNulty & Fos., J. of Dent. for Child., 129, March-April 1989
Guinea Bissau	Mattesen et al., Comm. Dental Health, 7: 123-33, 1990
Guyana	CAREC Surveillance Report, Vol. 10, No. 10, 1984
Haiti	Franz et al., Helv. Odont. Acta 27(3): 1983
Honduras	Colindres et al., Encuesta Nacional de Salud Bucal en Alumnos de la Escuelas de Educacion Primaria, Publication Cientifica No. 022-11-88
Hong Kong	Lo, thesis: 'Dental Caries among Hong Kong Children', July 1987
Hungary	WHO/ORH/J2/650/1991/Czukur
Iceland	Eliasson, Faculty of Odontology, University of Iceland, 1991
India	Harrison et al., 'A Survey of the Dental Health Status of 12-Year-Old School Children in Andhra Pradesh' 1993 Damle & Patel, Comm. Dent. & Oral Epid. 22: 1994
Indonesia	Morgan et al., Comm. Dent. Health 1992; 9: 171-9
Iran, Islamic Republic of	WHO/ORH/J2/737/1991/Sagadhiani
Iraq	Sulaiman, Report to Regional Meeting on Strengthening of Oral Health in Primary Health Care, 1993, EM/MTG.SOH.PHC/4
Ireland	Whelton et al., Children's Dental Health in the Western Health Board in Ireland, 1992
Israel	Zadik et al., Comm. Dent. & Oral Epid., 1992; 20: 54-5
Italy	WHO/ORH/J2/656/1992/Cerati
Jamaica	WHO/ORH/J2/464/1984/Warpeha
Japan	National Oral Health Survey, Ministry of Health & Welfare, 1994
Jordan	WHO/ORH/J2/748/1991/Abla Sayegh
Kazakhstan	Kuzmina, WHO Collaborating Centre at Moscow Medical Stomatological Institute, 1992
Kenya	Muturo & Patel, Epid. & Disease Control, Senior Level, 1986
Kiribati	WHO/ORH/J2/845/1992/Howarth

Korea, Republic of	Kim et al., 'A study on the oral health status of Korean people, January-December 1991'. Seoul National University, Dept. of Preventive & Public Health Dentistry
Kuwait	Glass, 'Report on Oral Health of Schoolchildren in Kuwait'. National Dental Health Survey, 1982
Kyrgyzstan	Kuzmina, WHO Collaborating Centre at Moscow Medical Stomatological Institute, 1992
Lao, Peoples Dem. Rep.	WHO/ORH/J2/859/1991/Barnaud
Latvia	International Collaborative Study of Oral Health Outcomes, 1993
Lebanon	WHO/ORH/J2/756/1993/Hussein
Lesotho	WHO/ORH/J2/350/1991/Condon & Makenete
Liberia	WHO/ORH/J2/351/1977/Gratiaen
Libyan Arab Jamahiriya	WHO/ORH/J2/760/1983/Leous
Liechtenstein	Report of Symposium on 'Caries Status in Europe'. Caries Res. 1990; 24: 381-96
Lithuania	Kuzmina, WHO Collaborating Centre at Moscow Medical Stomatological Institute, 1992
Luxembourg	'Country profiles on oral health in Europe 1991' WHO/EURO
Macao	WHO/ORH/J2/862/1994/Chan Iat Si
Madagascar	Petersen et al., National Oral Health Survey Report, 1994
Malawi	WHO/ORH/J2/380/1992-93/Sibale
Malaysia	Ministry of Health, Malaysia, 1982
Maldives	WHO/ORH/J2/557/1984/Tewari
Mali	WHO/ORH/J2/355/1983/Coulibaly
Malta	WHO/ORH/J2/661/1986/Galea
Martinique	Obry-Musset et al., Comm. Dent. & Oral Epid. 19:54-5, 1991
Mauritania	WHO/ORH/J2/356/1990/Fadel
Mauritius	WHO/ORH/J2/357/1993/Lahti
Mexico	WHO/ORH/J2/466/1991/Mendoza Roaf
	WHO/ORH/J2/466/1991/Nava Romero
Micronesia, Fed. States of	WHO/ORH/J2/882/1984/Wong He Deong
Moldova	Kuzmina, WHO Collaborating Centre at Moscow Medical Stomatological Institute, 1992
Mongolia	WHO/ORH/J2/563/1976/Bultcheva
Morocco	WHO/ORH/J2/663/1989/Mfesser Saoud
Mozambique	Olsson & Tanda 'Preventive Dental Care in Mozambique': discussion paper presented at WHO/ORH Expert Committee Meeting, 1983
Myanmar	Phantumvanit & Songpaisan, SEARO Assignment Report SEA/DH, Nov. 1994
Namibia	WHO/ORH/J2/358/1991/Schier
Nepal	WHO/ORH/J2/569/1984/Burgard
	WHO/ORH/J2/569/1985/Tewari
	WHO/ORH/J2/569/1986/Westbäcke
Netherlands	van den Heuvel, Department of Health, 1991
New Caledonia	WHO/ORH/J2/866/1991/Janin
New Zealand	Ministry of Health, Wellington, 1994
Nicaragua	Data supplied by PAHO, July 1993
Niger	WHO/ORH/J2/360/1992/Decroix
Nigeria	WHO/ORH/J2/361/1990/Adeyinka
Niue	Ministry of Health, Niue
Norway	Health Directorate, Oslo, 1992
Oman	Barnes, WHO Assignment Report, 1991

Pakistan	WHO/ORH/J2/763/1991/Khalid Almas
Panama	Data supplied by PAHO, July 1993
Papua New Guinea	Taylor, Pre-fluoridation survey in Goroku, Arawa WHO/ORH/J2/872/1983/Soo
Paraguay	Data supplied by PAHO, July 1993
Peru	Data supplied by PAHO, July 1993
Phillipines	National Survey, Department of Health, 1987
Poland	International Collaborative Study of Oral Health Outcomes, 1990
Portugal	WHO/ORH/J2/671/1989/Almeida
Reunion	WHO/ORH/J2/370/1981/Grosset
Romania	Hvriluc, Ministry of Health, Bucharest, 1992
Russian Federation	Kuzmina, WHO Collaborating Centre at Moscow Medical Stomatological Institute, 1992
Rwanda	WHO/ORH/J2/372/1993/Barrack & Fountain
Saint Kitts & Nevis	CAREC Suyrveillance Report, Vol. 10, No. 10, 1984
Saint Lucia	Russell, ICNND Survey, West Indies
Saint Vincent & the Grenadines	WHO/ORH/J2/486/1991/Olusegun Alonge
Samoa	WHO/ORH/J2/888/1987/WPRO
San Marino	WHO/ORH/J2/674/1987/Ciacci
Saudi Arabia	WHO/ORH/J2/767/1994/Petersen
Senegal	WHO/ORH/J2/375/1994/Sembene
Sierra Leone	Normark, Scand. J. Dent. Res.; 101: 121-9, 1993
Singapore	Ministry of Health, Singapore
Slovakia	National Oral Health Survey (Czechoslovakia), 1988
Solomon Islands	WHO/WPRO 0160 Annex 9
Somalia	WHO/ORH/J2/770/1992/Vecchiati
South Africa	National Oral Health Survey
Spain	WHO/ORH/J2/676/1993/Llodra Calvo
Sri Lanka	WHO/ORH/J2/539/1983/1984/Saparamadu
Sudan	Ghandour, Report to Regional Meeting on Strengthening Oral Health in Primary Health Care, 1993. EM/MTG.SOH.PHC/4
Suriname	WHO/ORH/J2/476/1978/Guile
Swaziland	WHO/ORH/J2/379/1978/Akinosi
Sweden	'Oral Health & Dental Care in Sweden', National Board of Health & Welfare, 1991
Switzerland	Menghini et al., 'Dental Caries in Swiss Schoolchildren aged 7 and 12: Results of a Nationwide Survey 1987-89'. Schweiz Monatsschr. Zahnmed., 1994
Syrian Arab Republic	Al Khateeb, Report to Regional Meeting on Strengthening of Oral Health in Primary Health Care, 1993. EM/MTG.SOH.PHC/4
Tajikistan	Kuzmina, WHO Collaborating Centre at Moscow Medical Stomatological Institute, 1992
Tanzania, Republic of	Vinther, MOH/WHO/ORH Project Report, 1991
Thailand	Dental Health Division, Department of Health, Ministry of Public Health, Bangkok
Togo	WHO/ORH/J2/383/1986/Türp
Tonga	National Oral Health Survey, data provided by WPRO
Trinidad & Tobago	Russell, ICNND Survey, West Indies
Tunisia	WHO/ORH/J2/780/1994/Banacin
Tuvalu	Ministry of Health, Tuvalu
Turkey	WHO/ORH/J2/682/1988/Saydam
Turkmenistan	Kuzmina, WHO Collaborating Centre at Moscow Medical Stomatological Institute, 1992

Uganda	Mosha & Tirwomwe, Report of Ministry of Health, 1993
Ukraine	Kuzmina, WHO Collaborating Centre at Moscow Medical Stomatological Institute, 1989
United Arab Emirates	Leous, WHO Assignment Report, 1992
United Kingdom of Great Britain & N. Ireland	OPCS Monitor, February 1994
United States of America	'Oral Health of United States children'. US Department of Health & Human Services/National Institute of Dental Research, 1989
Uruguay	Ramos, Director of Oral Health, Ministry of Public Health, Montevideo
Uzbekistan	Kuzmina, WHO Collaborating Centre at Moscow Medical Stomatological Institute, 1992
Vanuatu	Wong Hee Deong, WHO Assignment Report, 1991
Venezuela	Data supplied by PAHO, July 1993
Viet Nam	National Survey, Ministry of Health, 1990
Yemen	WHO/ORH/J2/787/1987/Tewari
	WHO/ORH/J2/725/1990/Hussein
Zaire	WHO/ORH/J2/334/1987/Lanoie
	WHO/ORH/J2/334/1991/Stringer
Zambia	IADR Conference, Lagos (Nigeria), February 1982
Zimbabwe	WHO/ORH/J2/363/1991/Sithole