

Utilization of dental services by Finnish adults in 1971 and 1980

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Changes in the utilization of dental services by the adult Finnish population were studied by reanalyzing the data from a nationwide study carried out in 1971 and by comparing those results with the data from an interview study of 581 persons carried out in 1980. In 1971, 56% of the interviewees had visited a dentist within the last 12 months. The corresponding percentage was 54% in 1980. The most common reason for the latest dental visit was routine examination in 1980, and only 4% of the interviewees had been recalled by the dentist. However, the recall system, when explained, was regarded as acceptable and practical by the vast majority of the interviewees. In 1971 utilization study found that the interviewees had a positive attitude toward dental health education. Likewise, the majority of interviewees in 1980 expressed a wish to keep their own teeth for their lifetime. □ *Community dentistry; attitudes; questionnaires*

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The development of oral health care and the prevention of dental diseases in Finland are based predominantly on the Primary Health Act, which came into effect in 1972. According to the Act the communes are responsible for the oral health care. Presently dental care is provided free of charge to children under the age of 17 years at the community based health centers. As a part of community dental health programs all children are yearly examined and treated if necessary. In the schools required comprehensive preventive dental programs including oral hygiene instructions, diet counseling and use of fluorides are also performed by dental personnel.

The number of health center dental services has been growing fast. At present health centers are providing approximately half and private practicing dentists the other half of the services. As far as resources allow health centers are also obliged to deliver dental services to the adult population at subsidized prices. Patients visiting private practitioners pay the whole fee for service out of their own pocket.

This survey was undertaken to increase our knowledge of the nationwide utilization

of dental services, especially during the period after the Primary Health Act.

Material and methods

Changes in the utilization of dental services by the adult Finnish population were studied by reanalyzing the data from a study carried out in 1971 prior to the introduction of the Primary Health Act (14) and by comparing those results with the data from an interview study carried out in 1980.

The interviewees for both studies were selected according to a two-stage cluster sampling design in order to represent the entire Finnish population (12). The data were collected from interviews by trained interviewers during June 1971 and March 1980. The interviews were carried out by the poll organization Suomen Gallup Oy in connection with their regular monthly market survey. The distribution of the interviewees (aged 15–50 years) with regard to background variables is presented in Table 1. Those interviewees who reported having last visited the dentist more than five years ago

Table 1. The distribution of the interviewees in 1971 and 1980 after subgrouping with regard to sex, age, education and domicile

	1971		1980	
	No.	%	No.	%
Total material	724	100	648	100
Sex				
Female	369	51	340	52
Male	355	49	308	48
Age				
15-24 years	222	30	165	26
25-50 years	502	69	483	74
Education				
Elementary school	343	47	280	43
Secondary school	224	31	216	33
Matriculation examination	157	22	152	24
Domicile				
Rural area	311	43	266	41
Towns < 100000 inhabitants	239	33	227	35
Towns > 100000 inhabitants	174	24	155	24

were excluded from the analysis. The distribution of the reduced study series, consisting of 581 persons in the 1980 study, is presented in Table 3.

In the 1980 study each subject answered four questions and had to choose the most suitable answers out of a list of alternatives. Special care was taken to present questions in a form easily intelligible to the layman. Interview information was reduced through cross-tabulation and multiple regression analysis. The statistical significance of the differences observed was tested by the comparison of two frequencies (4).

Results

In 1971, 56% of the interviewees had visited a dentist within the last 12 months. The corresponding percentage was 54% in 1980 (Table 2).

The most common reason for the latest dental visit was routine examination in 1980 (Table 3). Only 4% of the interviewees, mainly young and living in rural areas, had been recalled by the dentist. In separate questioning, however, 83% of the interviewees regarded the recall system, when it was explained to them, as acceptable and practical, and only 3% were not in favor of such a system. There were no statistically

significant differences when background variables were included.

In a multiple regression analysis, 20% of the variance in acceptance of the recall system was explained by experiences from the last dental visit, age and domicile of interviewee and the type of dental work needed on the previous visit (Table 4).

When asked separately, 61% of the interviewees wanted definitely to preserve their own teeth regardless of costs and repeated visits to the dentist; 33% expressed a less strong preference to preserve their own teeth; 3% preferred a denture; and 3% gave another answer. There were no statistically significant differences when background variables were included in the analysis.

Discussion

A pattern of regular dental treatment is a complex behavioral phenomenon created by a variety of factors (5). Besides dental status (3, 11) there are also other factors which affect the utilization of dental services including financial status, education, lifestyle and dental attitudes of a patient (2, 8, 16). Furthermore, anxiety and fear of pain may act as barriers to dental visits for many people (7, 10, 14, 17).

Table 2. The interval between the two most recent dental visits by Finns interviewed in 1971 and 1980 in percentages. The alternative answers are listed according to increasing interval in the total material. Statistically significant differences ($P < 0.01$) within each group of observations are indicated by the letters a and b

	Sex		Age			Education			Domicile		
	Total material	F	M	15-24 years	25-50 years	Elementary school	Secondary school	Matriculation exam	Rural area	Town	
										<100,000 inhab.	>100,000 inhab.
0-6 months											
1971	35	41 ^a	30 ^b	35	33	30 ^a	31 ^a	41 ^b	33	36	38
1980	36	39	35	40	37	30 ^a	38 ^{ab}	43 ^a	36	36	36
7-12 months											
1971	21	22	19	25 ^a	11 ^b	21	25	16	20	22	16
1980	18	17	19	23	15	12 ^a	21 ^{ab}	25 ^b	15	21	19
13-24 months											
1971	16	14	19	18	16	16	16	16	18	17	13
1980	24	25	22	24	23	24	25	21	20	22	31
25 months-5 years											
1971	16	8 ^a	22 ^b	14	19	23 ^a	15 ^b	10 ^b	16	18	13
1980	11	11	11	7	14	14	10	9	12	11	10
Over 5 years											
1971	13	14	10	8 ^a	20 ^b	11	12	16	13	8	18
1980	10	7	12	6	12	17	5	2	15	8	3
Cannot remember											
1971	1	1	1	—	—	—	1	—	1	—	1
1981	1	—	1	—	—	2	—	—	—	1	1

Table 3. The subjective appraisal by 581 Finns interviewed in 1980 of the reasons for their latest dental visit. Statistically significant differences ($P < 0.1$) within each group of observations are indicated by the letters a, b and c

	Total material	Sex		Age		Education			Domicile		
		F	M	15-24 years	25-50 years	Elementary school	Secondary schools	Matri-culation	Rural area	Town <100,000 inhab.	Town >100,000 inhab.
Number	581	313	268	158	423	231	202	148	225	207	149
Percentage	100	54	46	27	63	40	35	26	39	36	26
Routine examination	36	42 ^a	30 ^b	37	34	24 ^a	38 ^b	52 ^c	31 ^a	36 ^{ab}	44 ^b
Dental caries	22	19	22	19	21	21	21	21	22	22	23
Toothache	16	15	17	12	18	22 ^a	15 ^{ab}	8 ^c	17	15	15
Accident	8	8	7	5	10	4	10	10	8	7	10
Prosthetic treatment	6	7	4	1	10	11	3	2	7	6	4
Tooth extraction	4	3	4	2	6	7	2	1	4	6	—
Recall visit	4	4	3	12 ^a	0 ^b	6	2	2	7	3	1
Other reasons	6	3	10	11	2	5	8	4	7	7	6

Table 4. Multiple regression analysis of acceptance of the recall system among 581 interviewed Finns

Variable	Regr. coeff.	SD	T value
Experienced fear	0.193	0.041	4.710
Experienced discomfort	0.131	0.039	3.313
Domicile	-0.122	0.038	3.262
Age	0.118	0.039	3.050
Prosthetic care	0.110	0.038	2.868
Toothache	0.106	0.038	2.805

R = 0.196, F = 11.41.

The availability of dental services is also known to have an effect on the dental demand (16). In 1971, there was one dentist to every 1700 Finns and geographical distribution of dental personnel was uneven. In 1980, the dentist/population ratio was approaching an internationally high ratio of 1 to 1200 (15) and dental services were better distributed. This situation results from the establishment of dental posts in accordance with the Primary Health Act and from the growing number of students admitted for dental education in the last few years. Practically all the health center posts have been filled since 1980. Private practicing dentists are located mostly in the southern part of Finland and in large towns.

People can remember the time of their last dental visit fairly well if it took place within recent years (1). In view of the changes in the dental care delivery system during the period studied, it was somewhat surprising to find no changes in the frequency of dental visits (Table 2). At present the frequency of yearly visits in Finland is equal to what it was in other Nordic countries in the early seventies (5, 8, 9, 17).

Optimal interval between personal dental examinations is difficult to determine, and its scientific basis seems to be unclear (17). The importance of regular examinations of the oral cavity and the need for treatment of early lesions has, however, been constantly emphasized by the dental profession. In Finland a visit to a dentist at least once a year on a regular basis has been generally recommended. Despite the absence of any increase in frequency of dental visits, other parameters indicate increasing dental health

in young Finns during the period of the Primary Health Act (15). According to the current legislation the vast majority of new dental resources have been directed to free oral health care of children and youths during the period studied, whereas most adults have been obliged to buy their dental services from the private practitioners on a fee for service basis. This situation may have influenced the total utilization of dental services nationally.

Acute dental care (toothache, tooth extractions, accident) as opposed to prophylactic or long-term care seems to play a decisive role in Finnish dental treatment patterns in 1980 (Table 3). Although routine examination on the patient's own initiative was common as a reason for dental visit (36%) in this study, the corresponding percentage in a nationwide Swedish study was 50% (6). The category of other reason was small and consisted mainly of the need for preventive, periodontal and orthodontic treatment. The low percentage in this category could be anticipated on the basis of the treatment given during dental visits in Finland (13).

A part of the responsibility for maintaining a regular dental treatment pattern could be transferred to the dental profession itself. According to this concept various systems in which dentists call in patients at certain intervals can be used. This so-called recall system had not been applied to the Finns excluding those, mainly young people, who were still entitled to dental care provided by health centers. Yet, when the recall idea was introduced, general acceptance was found. Acceptance of the recall system was particu-

larly high among those with negative treatment experience (Table 4), which should be used as an incentive to stimulate dentists to see their patients regularly. According to Håkansson (6), 25% of adult Swedes had been contacted by the dentist.

The 1971 utilization study (13) found that the interviewees had a positive attitude towards dental health education and its potential for improving dental health. Likewise, the majority of interviewees in 1980 expressed a wish to keep their own teeth for their lifetime. These positive opinions for maintaining good oral health can be regarded as significant for dental health care planning. However, comparison of the quantity of interviewees expressing a wish to keep their own teeth for their lifetime with the frequency of yearly dental visits (Table 2) reveals contradiction between attitudes and actual behavior which is known to be one of the basic problems in dental health education (19). It will be interesting to see how young Finns will succeed in maintaining their good start towards a good dental health and how this will affect the use of dental services in the years to come.

References

1. Barenthin, I. & Smedby, B. A two-wave interview study of frequency of dental visits and dental complaints. *Community Dent. Oral Epidemiol.* 1979, 7, 129-132
2. Freeman, H. E. & Lambert, C., Jr. Preventive dental behaviour of urban mothers. *J. Hlth. Hum. Behav.* 1965, 6, 141-147
3. Gray, P. G., Todd, J. E., Slack, G. L. & Bulman, J. S. Adult dental health in England and Wales in 1968. Her Majesty's Stationary Office, London, 1970
4. Hald, A. *Statistical theory with engineering applications.* John Wiley & Sons, New York, 1952
5. Helöe, L. A. & Tronstad, L. The use of dental services among Norwegian adults in 1973. *Community Dent. Oral Epidemiol.* 1975, 3, 120-125
6. Håkansson, J. Dental care habits, attitudes towards dental health and dental status among 20-60 year old individuals in Sweden. *Dialog*, Lund, 1978
7. Jackson, D., Murray, J. J. & Fairpo, C. G. Regular dental care in dentate person. *Br. Dent. J.* 1973, 135, 59-631
8. Jensen, K. Dental care practices and socio-economic status in Denmark. *Community Dent. Oral Epidemiol.* 1974, 2, 273-281
9. Johansson, S. Den vuxna befolkningens hälsotillstånd. Utkast till kapitel 3 i betänkande om Svenska folkets levnadsförhållanden att avgivas av Låginkomstutredningen. Allmänna förlaget, Stockholm 1970
10. Kegeles, S. S. Some motives for seeking preventive dental care. *J. Am. Dent. Assoc.* 1963, 67, 111-118
11. Kriesberg, L. & Treiman, B. R. Socio-economic status and the utilization of dentist's services. *J. Am. Coll. Dent.* 1960, 27, 147-165
12. Markkula, J., Murtomaa, H. & Ainamo, J. Conceptions of Finnish people about the etiology and prevention of dental caries and periodontal disorders. *Community Dent. Oral Epidemiol.* 1977, 5, 108-115
13. Murtomaa, H. & Ainamo, J. Role of health education among services rendered by dental personnel in Finland. *Community Dent. Oral Epidemiol.* 1977, 5, 164-168
14. Murtomaa, H. & Markkula, J. Utilization and hindrances to utilization of dental services in Finland prior to the Public Health Act. *Proc. Finn. Dent. Soc.* 1977, 73, 138-143
15. National Board of Health Oral Health in Finland. Helsinki, 1980
16. Richards, N. D. Utilization of dental services. In: Richards, N. D. & Cohen, L. K., eds. *Social sciences and dentistry: a critical bibliography.* FDI, The Hague, 1971, pp. 209-240
17. Sheiham, A. Is there a scientific basis for six-monthly dental examinations? *Lancet* 1977, 2, 442-444
18. Smedby, B. Betydelsen av vissa faktorer för tandvårdskonsumtionen. *Socialmed. T. Ser. no. 37.* Stockholm, 1972
19. Young, M. A. Dental health education of adults. In Richards, N. D. & Cohen, L. K., eds. *Social sciences and dentistry: a critical bibliography.* FDI, The Hague, 1971, pp. 241-274