

Dental visiting patterns of Finns and Swedes in Sweden, 1976–1980

Eeva Widström

Department of Oral Diagnosis, School of Dentistry, Karolinska Institutet, Stockholm, Sweden

Widström E. Dental visiting patterns of Finns and Swedes in Sweden, 1976–1980. *Acta Odontol Scand* 1984;42:305–312. Oslo. ISSN 0001–6357.

Information on treatment provided to a random (cluster) sample of all adult patients treated under the dental insurance scheme in Sweden since 1974 is stored at the National Social Insurance Board (NSIB). In this study the use of dental services by settled Finnish immigrants and Swedes over a 5-year period (1976–80) was compared, using this information. The material consisted of 1152 17- to 64-year-old Finnish immigrants, selected in accordance with the same criteria as the NSIB sample, registered on the population register of Stockholm county in 1975 and still on the register in 1982, and a comparison group of individually matched Swedes. Standard NSIB computer programs and a special program for recurrent use of dental services in 1976–79 were used. Because of regulations on confidentiality of personal information, comparisons were based on inter-group differences. Each year about 40% of Finnish immigrants and 50% of Swedes had been to a dentist. In both groups women visited a dentist more frequently. The proportion of persons in the different groups who had used dental services in the period 1976–80 varied only slightly from year to year. In the 4-year period 1976–79, 74% of Finnish immigrants and 87% of Swedes in the studied groups had been to a dentist at least once. Significantly more Swedes than Finnish immigrants had seen a dentist annually. Of those who had been to a dentist, a significantly greater proportion of Finnish immigrants than Swedes had received acute treatment and dentures. Mean patient charge was higher for Finnish groups than Swedish in all years, and more Finnish immigrants than Swedes exceeded the threshold for increased payment support. Use of dental services in Sweden by Finnish immigrants was fairly stable over the period studied and was lower than use by Swedes from the comparison group. □ *Comprehensive dental care; immigrants; national health statistics*

Eeva Widström, Department of Oral Diagnosis, Odontologiska klinikerna, Box 4064, S-141 04 Huddinge, Sweden

Need of and demand for dental care vary among countries and societies. Surveys of dental health and dental care consumption in Finland and Sweden suggest that Swedes use dental services more frequently than Finns (1–7). Even though immigrants in Sweden have the same rights to dental services as the native population, earlier studies have revealed low consumption of dental services by adult Finnish immigrants in Sweden (8–10). One reason for this may be that recent immigrants have other, more pressing problems than dental ones, and immigrants intending to stay only a short period are probably less likely to seek routine dental care in the new country. It might, however, be expected that the longer immigrants had lived in Sweden, the more

their patterns of use of dental services would become like those of Swedes. Whether this is the case has not been reported on.

Since the dental insurance scheme started in 1974, the National Social Insurance Board (NSIB) has collected information on treatment provided to a cluster sample of patients—those born on the 20th of any month. The sources of this information are payment claims from private practitioners and reports on treatment provided, which the staff of the Public Dental Service (PDS) are required to send to the NSIB (11). In the period of this study, the dental insurance scheme covered everyone residing in Sweden aged 17 years and over. In principle, the scheme covered 50% of dental fees but 100% of the costs of materials for prosthetic

Table 1. The Finnish immigrant sample by age (in 1975) and sex

Age group, years	Men, no.	Women, no.	Total, no.
17-19	26	35	61
20-29	145	275	420
30-39	190	213	403
40-49	83	91	174
50-64	46	48	94
Total	490	662	1152

devices. The proportion covered has always been higher (75%) over a certain minimum limit, which has changed over the years.

The aim of this study was to compare the use of dental services by and types of dental treatment performed on matched groups of settled Finnish immigrants and Swedes, during a 5-year period, using statistics collected by the NSIB.

Materials and methods

Data on all Finnish citizens aged from 17 to 64 years with birth dates on the 20th of any month and living in the county of Stockholm in 1975, altogether 1378 persons, were drawn from the population register of the Central Statistical Bureau. For each Finnish citizen a Swedish citizen was selected, individually matched with respect to age, sex, and occupation. Details of this procedure have been published previously (9). The lists were compared with the population register of the Central Statistical Bureau for 1982, and the 1152 Finns who had lived in Sweden in 1975 and were still resident in 1982, and the corresponding Swedes, constituted the 2 groups to be compared. The distribution of the Finnish group by age and sex is shown in Table 1.

According to the occupation-based classification of social class used in this study (12), the majority of the subjects (72% of men and 51% of women) belonged to social class 3. Social class 2 included 11% of men and 23% of women, and 3% of both men and women belonged to social class 1. Fourteen

percent of the men and 24% of the women could not be classified.

Information about the use of dental services and dental treatment performed during the period 1976 to 1980 was collected from the patient register at the NSIB. Standard programs that deal separately with treatment given by private practitioners and the PDS provided the following information: use of dental services; utilization of different types of treatment; number and type of treatment measures performed, for which a payment code exists; mean patient charges for dental treatment; and the number of courses of treatment whose cost exceeded the threshold for increased NSIB support.

In addition, a special program provided information on recurrent use of dental services by individuals during the 4-year period 1976-79. Data from private practitioners and the PDS were combined when possible. Regulations to protect confidentiality prevented information on individuals from being made available, so that comparisons, after stratification with respect to age and sex, are based on inter-group rather than intra-pair differences.

Statistical methods

Chi-square, Fisher's exact probability, and Student's *t* tests (with or without age standardizations) were used when comparing differences in distributions between groups and group means. A chi-square test for a trend with regard to time (years) was used (13).

Results

About 40% of the Finnish immigrants and 50% of the Swedish comparison group had visited a dentist in each year of the survey period. Finnish men used the dental services least; approximately one in three went to a dentist each year (Fig. 1), whereas between 42% and 49% of Swedish men did. The difference between Finnish and Swedish men was significant at the 0.1% level. A higher proportion of women visited a dentist each year, and Finnish women made less use of

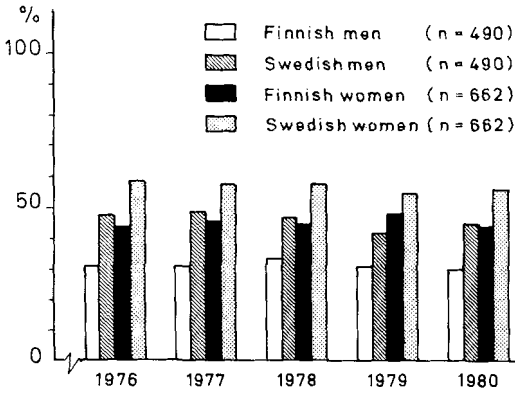


Fig. 1. Use of dental services by Finnish immigrants and Swedes, by year (1976–1980) and sex. Proportion (%) who attended a dentist (private practice and/or PDS).

proportion of those below 40 years of age used dental services than older persons, again with only slight variation from year to year (Table 2). Private practitioners were the main suppliers of dental treatment to both study groups (Table 3). Apart from an apparent decrease in use of the PDS, there seemed to be little variation from year to year. However, although Swedes visited a dentist significantly more often than Finnish immigrants, there was a tendency for this difference to diminish with time during the years covered in this study. This change was significant for men ($p < 0.01$, chi-square for the trend = 9.1) and was due to a gradual reduction of use in dental services by Swedish men during the period studied.

the dental services than the Swedes; this difference was also significant at the 0.1% level (Fig. 1). There was little variation in these figures from year to year. A greater

Information on recurrent use of dental services for the period 1976–79 showed that 74% of the Finnish immigrants and 87% of the Swedish comparison group in this material had been to a dentist at least once during this 4-year period; the differences

Table 2. Percentages of Finnish immigrants and Swedes who visited a dentist, by age and year (1976–1980) (private practice and/or PDS)

Age (in 1975)	n	1976		1977		1978		1979		1980	
		Finns (%)	Swedes (%)	Finns (%)	Swedes (%)	Finns (%)	Swedes (%)	Finns (%)	Swedes (%)	Finns (%)	Swedes (%)
17–19	61	32.8	41.0	32.8	52.5	41.0	55.7	49.2	49.2	41.0	50.8
20–29	420	43.1	55.0	43.1	55.0	45.5	58.8	43.6	54.3	41.0	53.3
30–39	403	39.7	57.3	44.7	57.1	38.7	54.8	42.4	49.1	39.5	52.1
40–49	174	33.3	51.7	27.6	52.9	31.0	45.4	35.1	44.3	32.8	48.9
50–64	94	28.7	46.8	33.0	41.5	41.5	37.2	26.6	40.4	26.6	43.6
Total	1152	38.7	53.9	39.9	54.2	40.4	53.5	40.8	49.6	38.0	51.3

Table 3. Percentages of Finnish immigrants and Swedes who visited a dentist, by year (1976–1980) and treatment sector

Year	Private practice		Public Dental Service	
	Finns (n = 1152), %	Swedes (n = 1152), %	Finns (n = 1152), %	Swedes (n = 1152), %
1976	33.5	49.7	5.2	4.2
1977	37.2	51.6	2.7	2.6
1978	37.6	51.6	2.7	1.8
1979	38.4	47.8	2.4	1.7
1980	35.4	49.0	2.6	2.3

Table 5. Number of treatment measures, classified by NSIB payment codes, per 100 treated persons by year (1976-1980) (private practice and PDS combined)

Types of treatment measures (NSIB code)	1976		1977		1978		1979		1980	
	Finns (n = 446)	Swedes (n = 621)	Finns (n = 460)	Swedes (n = 624)	Finns (n = 465)	Swedes (n = 616)	Finns (n = 470)	Swedes (n = 571)	Finns (n = 438)	Swedes (n = 591)
Radiographic examinations (18, 19)	187	182	193	182	211	181	203	195	180	172
Extractions (30, 31)	32	16	33	15	34	22	23	13	19	11
Endodontics (root fillings) (44-46)	16	12	18	12	17	13	15	16	13	8
Fillings										
Amalgam (50-56)	171	148	163	111	143	131	139	146	137	118
Composite (57-59)	89	81	81	79	73	75	75	79	74	53
Crowns (70-74)	26	20	33	22	23	20	24	25	26	19
Bridge pontics (77)	11	6	16	9	8	7	5	8	8	6
Removable dentures										
Partial (83)	4	1	5	2	7	1	2	2	3	1
Full (84-86)	5	1	3	1	5	2	4	1	4	1
Total	541	467	545	433	521	452	490	485	464	389

a significant increase in the proportion of Swedish men ($p < 0.001$) and women ($p < 0.01$) and Finnish women ($p < 0.001$) who had received prophylactic measures and a significant reduction in the proportion of Swedish women who had received fillings ($p < 0.05$) in 1980 compared with 1976.

In absolute terms, Finnish immigrants had received more treatment measures per 100 treated persons in each of the 5 years than had Swedes (Table 5). About 4 Finns per 100 and 3 Swedes per 100 received removable dentures each year. On an average, each Finn had received about 1.5 and each Swede 1.3 amalgam fillings per year. For Finns the total number of treatment measures showed a tendency to fall from 1976 to 1980, but for Swedes this tendency was not so clear. Significance tests were not done on these differences because data at the individual level were not known. Approximately the same number of radiographical examinations and composite fillings was supplied to both groups, but Finns received numerically more extractions, amalgam fillings, and full dentures. They also received slightly more endodontic treatments and crowns and bridges. Provision of extractions and amalgam fillings to Finns declined numerically during the 5 years, but consumption of other treatment items was fairly stable from year to year.

Finns on an average received 18 min and Swedes 19 min each of time-debited preventive measures. The amount of time paid for under these codes increased slightly from 1976 to 1980. About 82% of time debited was on code 28, scaling, and little difference existed between the groups and from year to year. Total time spent on prophylactic measures carried out by dental hygienists and/or dental nurses (examination, instruction, scaling, fluoride application, and treatment of sensitive teeth) also varied for Finns and Swedes. About 70% of treatment supplied by hygienists consisted of scaling.

The mean patient charge varied between SEK 256 and SEK 348 for Finns and between SEK 250 and SEK 280 for Swedes. Except for men in 1977 and 1979, Finns had a significantly higher mean patient charge in each year. There was no consistent difference in

either group between men and women. In each year more Finnish immigrants than Swedes exceeded the threshold entitling them to increased payment support.

Discussion

The introduction of the general dental insurance scheme in January 1974 and records kept by the NSIB make it possible to study consumption of dental care by adults in Sweden. However, official Swedish statistics do not provide complete figures on immigrants. Thus comprehensive studies of immigrants must be based on those who have retained their original nationality. It was not possible to establish from the population register the date on which Finnish immigrants had arrived in Sweden; thus the Finnish sample in this study consisted of persons who in 1976 had lived in Sweden at least 1 year, and in 1980 at least 6 years. Furthermore, it was not possible to ascertain whether any of them had returned to live in Finland temporarily during the period of the study. In a previous questionnaire survey of Finnish immigrants, only a few persons among the thousand respondents reported that they had returned to live in Finland for a temporary period (10).

NSIB information on treatment provided by private practitioners is regarded as complete and reliable (14), but information provided by the PDS is known to be incomplete (15), for reasons discussed previously (9). In the county of Stockholm it has been estimated that approximately 48% of PDS treatment provided in 1976 was not reported to the NSIB; later estimates were 56% in 1977, 59% in 1978, 67% in 1979, and 71% in 1980 (16). Only between 2% and 5% of the material had used the PDS each year. Even correcting for information missing from this source (16), both the Finnish immigrants and the Swedes used the PDS less than the whole population, about 11%–14% of whom use the PDS, according to NSIB calculations (14). This may be because in Stockholm the PDS treats a smaller proportion of adults than in the rest of the country (14). The information deficit is therefore small and

unlikely to be biased with respect to nationality.

The proportion of Swedes in this study who had been to a dentist (PDS or private) during the study period, after correction for non-reporting from PDS sources, was about 10% higher than the national average (17). However, the national figures include persons above 64 years of age and persons living in rural areas, whereas the comparison group was 64 years or younger and drawn from residents of the county of Stockholm and thus was a predominantly urban group. The proportion of Finnish immigrants who had been to a dentist in the period was lower than the national average. Information on recurrent use of dental services in the period 1976–79 showed that the Swedes in this material had had more regular and frequent treatment than the Finnish immigrants. The lower use of dental services by Finnish immigrants may partly be explained by a higher frequency of edentulous persons. In an earlier study (18) a significantly greater proportion of Finnish immigrant women were shown to be edentulous compared with a Swedish population, but for men no significant difference was found.

It has been shown that some 6% of Finnish immigrants visit a dentist in Finland at least every 2nd year, and about 17% do so occasionally (10). However, none of those who saw a dentist in Finland had lived in Sweden longer than 5 years, and use of Finnish dental services by Finnish immigrants in Sweden decreased with increased residence in Sweden (10). Therefore, the contribution of dental treatment in Finland to the total consumption of dental care by the relatively settled Finnish immigrants of the present study is probably fairly small, and it does not affect the conclusion that a greater proportion of Swedes than Finnish immigrants attend a dentist regularly.

The pattern of use of the dental services by both groups in the study was relatively stable during the 5 years, although there was a slight trend towards lower treatment consumption by the Swedes with time. This may be indicative of a reduction in treatment need, and the fact that the proportion of Swedish women receiving fillings decreased

supports this. However, another possibility is that the treatment backlog that built up after the introduction of the Dental Insurance Scheme in 1974 diminished during the period of this study.

The treatment spectrum received by the Finnish immigrants differed from that provided to the Swedish comparison group. Finns had a greater consumption of acute and prosthetic treatment. Of those who received treatment, Finnish immigrants received more treatment than the Swedes. This was probably due to a greater accumulated treatment need, itself a consequence of low utilization of dental services. The small difference in use of preventive measures by the two groups does not accord with the fact that Finnish immigrants generally have a greater need for treatment than Swedes (18, 19). The time used on this type of treatment was in accordance with recent findings that the Dental Insurance Scheme pays on an average for 16 min of preventive measures per patient per year, including periodontal treatment (20). This is far below the time estimated to be necessary to treat periodontal disease adequately and to provide oral hygiene training (11). One explanation could be that provision of these time-debited treatment items is not related to patients' need of treatment but rather supplied routinely by dentists.

The results of this study with regard to dental visiting patterns and treatment spectrum provided are in accordance with those reported in earlier studies in this series (8–10). However, compared with a similar study of dental care consumption in 1975, this study shows increases of approximately 12% in the proportion of Finnish immigrants and of 8% in the proportion of Swedes attending a dentist (9). This may be a consequence of the rush on dental services that occurred when the dental insurance scheme was introduced in 1974 and which meant that it was difficult to get a dental appointment at the start of the observation period. The fact that the Finnish group's use of dental services increased more may be related to the different composition of the Finnish groups in 1975 (9) and the present study. The 1975 study included Finnish immigrants regard-

less of duration of Swedish residence, whereas in the present study only settled immigrants were included.

The present samples of settled Finnish immigrants and Swedes have been shown to have stable patterns of use of dental services in Sweden during the 5-year period covered by this study, with Finnish immigrants constantly making less use of dental services. There was no indication that longer residence in Sweden led to increased use of dental care by the Finns.

References

1. Alvesalo I. 20-44-vuotiaiden hammashoidollisesta käyttäytymisestä Etelä-Suomessa ja kehitysalueella. *Suom Hammaslääk L* 1975;22:226–34.
2. Heløe LA. Hva er samfunnsodontologi? In: Lind O, Birn H, Heløe LA, Barentin I, eds. *Samfunnsodontologi*. Copenhagen: Munksgaard 1980:26–9.
3. Håkansson J. Dental care habits, attitudes towards dental health and dental status among 20–62 year old individuals in Sweden [Thesis]. Malmö, 1978.
4. Lavstedt S, Bolin A, Henrikson C-O, Jonsson B. Tandtillstånd och behov av tandvård hos en normalpopulation. Stockholm: Delegationen för social forskning, 1982.
5. Lavstedt S, Eklund G. Betydelse av vissa faktorer för frekvensen av tandläkarbesök. *Rebusundersökningen I. Tandläkartidn* 1977;69:538–48.
6. Markkula J, Ainamo J, Murtomaa H. Suomalaisten hammashoitoa koskevat tiedot ja tottumukset. I. Haastattelututkimus hampaiden puuttumisesta ja proteeseista. *Proc Finn Dent Soc* 1973;69:266–72.
7. Nyman K. *Hammaslääkärin palvelusten käyttö ja hampaiden kunto*. Helsinki: Kela, 1975.
8. Widström E, Martinsson T. Social background and dental care habits and attitudes of Finnish immigrants in Sweden. *Community Dent Oral Epidemiol* 1980;8:407–12.
9. Widström E, Martinsson T. Comparison of use of dental services by Finnish immigrants and Swedes using national health statistics. *Community Dent Oral Epidemiol* 1983;12:266–70.
10. Widström E, Nilsson B, Martinsson T. Use of dental services by Finnish immigrants in Sweden assessed by questionnaire. *Scand J Soc Med* 1984;12:75–82.
11. *Statens offentliga utredningar. Tandvården under 80-talet*. Stockholm: SOU 1982:4.
12. Gustafsson G, Swedner H. *Teaterundersökningen i Malmö*. Lund: Sociologiska institutionen, 1962.
13. Peto R, Pike MC, Armitage P, Breslow NE, Cox DR, Howard SV, Mantel N, McPherson K, Peto J, Smith PG. Design and analysis of randomized clinical trials requiring prolonged observation of each patient. II. Analysis and examples. *Br J Cancer* 1977;35:1–39 (appendix 5, p. 36).

14. Sundberg H. Tandvården i Sverige. Stockholm: Invest-Odont, 1982.
15. Markén K-E, Blendow L-G. Tandvårdsförsäkringen: behandlingspanorama 1976 och 1977. Tandläkartidn 1979;71:416-23.
16. Riksförsäkringsverket. Unpublished material, Stockholm 1983.
17. The National Social Insurance Board. National Insurance 1980. Stockholm: NSIB, 1982.
18. Widström E, Nilsson B. Dental health and perceived treatment needs of Finnish immigrants in Sweden. Scand J Soc Med 1984 (in press).
19. Widström E. Loss of teeth and the frequency and condition of removable and fixed dentures in Finnish immigrants in Sweden. Swed Dent J 1982;6:61-9.
20. Håkansson J, Eriksen TE. Treatment of caries and periodontitis in Sweden in 1974-77. Community Dent Oral Epidemiol 1982;10:301-7.

Received for publication 2 September 1983