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General practice consultations in central and northern Finland

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Objective – To examine general practice consultations in health centres in central and northern parts of Finland.

Design – A questionnaire concerning all general practice consultations during one week.

Setting – Central and northern parts of Finland in a region comprising 72% of the area of the country and one-third of its population.

Participants – 851 health centre doctors.

Outcome measures – Consultation rates by age and sex of the patients and by characteristics of doctors and their practices.

Results – The average consultation rate per 1 000 female inhabitants was 43 and per 1 000 male inhabitants 34 per week. For total contacts, a J-shaped association with increasing age was demonstrated for both sexes. The average number of consultations per doctor in a week was 72. Consultation rates were lowest among physicians over 45 years of age. A low consultation rate was also found among general practitioners not participating in the personal doctor programme and among those who worked in municipalities with over 30 000 inhabitants.

Conclusion – In Finland, consultation rates per 1 000 inhabitants, as well as per general practitioner, are remarkably lower than in most European countries. The personal doctor programme with defined lists of patients seems to be associated with high consultation rates.

Key words: primary health care consultations, health centre.

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The number of consultations and home visits made by general practitioners (GPs) varies greatly between different countries in Europe (1). The consultation rate varies by age of patients, and females make more consultations than males (2-7). Moreover, female patients prefer female doctors, and young patients prefer young doctors (3).

Municipalities in Finland are responsible for the organization of primary health care either solely or in collaboration with other municipalities in the county. They are also responsible for the organization of secondary and tertiary care. Health centres, particularly in rural regions, are well equipped with modern operation rooms for

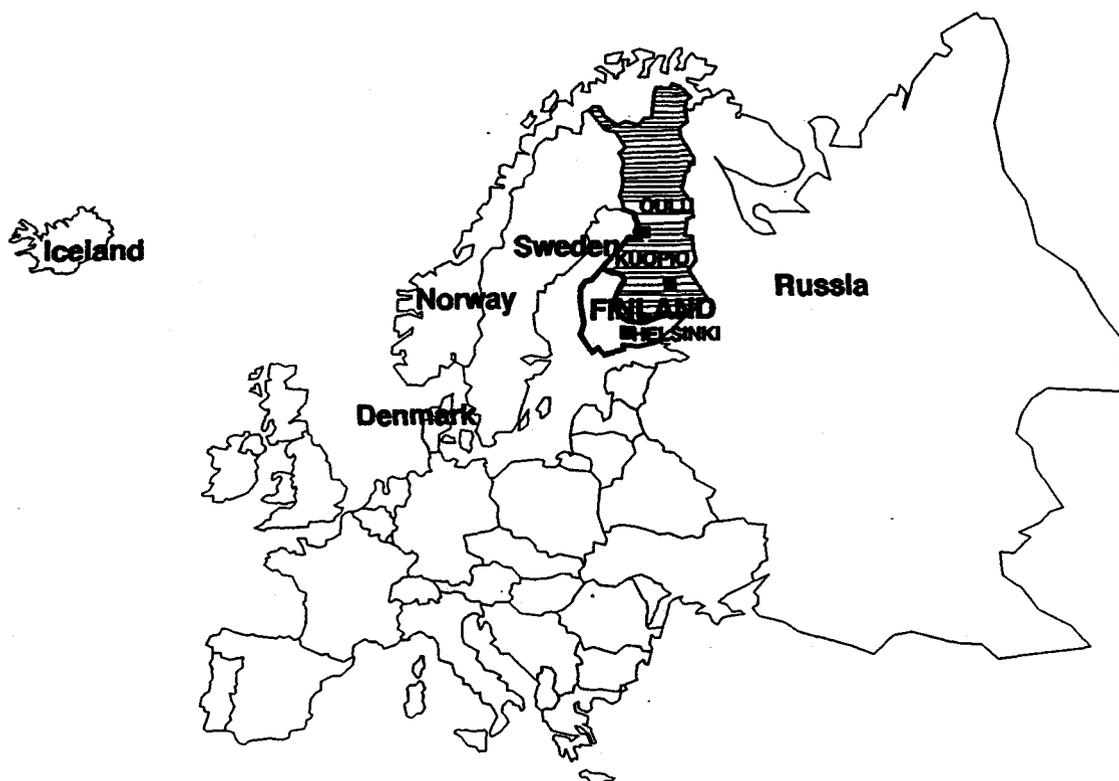


Figure 1. The study area

minor surgery, laboratories and x-rays, including ultrasound (8). The health centre as an administrative unit consists of one or several health stations where health centre doctors work. Of the 12 448 practising physicians in Finland, one-quarter (3 057) worked as salaried doctors in the health centres; 55% were women, and 23% were specialized in general practice (9).

During recent years in Finland there has been great interest in developing a personal doctor programme with defined lists of patients. Of the total population of 5 million, about 1.3 million Finns are covered by this programme (10). However, the programme has not progressed as planned because of an economic recession during the past few years. The purpose of the present study was to determine whether there are differences between health centre physicians' consultations by age and sex of the patients and by characteristics of doctors and their practices.

Material and methods

The study was carried out during one week (30 November–6 December 1992) in central and northern parts of Finland. The study area comprises 72% of the area of Finland, with a population of 1.5 million (Fig.1). There are altogether 1 020 GPs working in 95 health centres in the region. They refer their patients to seven regional hospitals, eight central hospitals, and two university hospitals (Kuopio and Oulu).

A questionnaire was sent to every practising health centre doctor in the study area to record:

1. the following personal data of the doctor: age, sex, date of registration, speciality, and professional status;
2. the characteristics of the practices: size of the health centre, number of doctors at the health station, workload and participation in the Finnish personal doctor programme;
3. data about the local community: size, and distance to the nearest hospital;

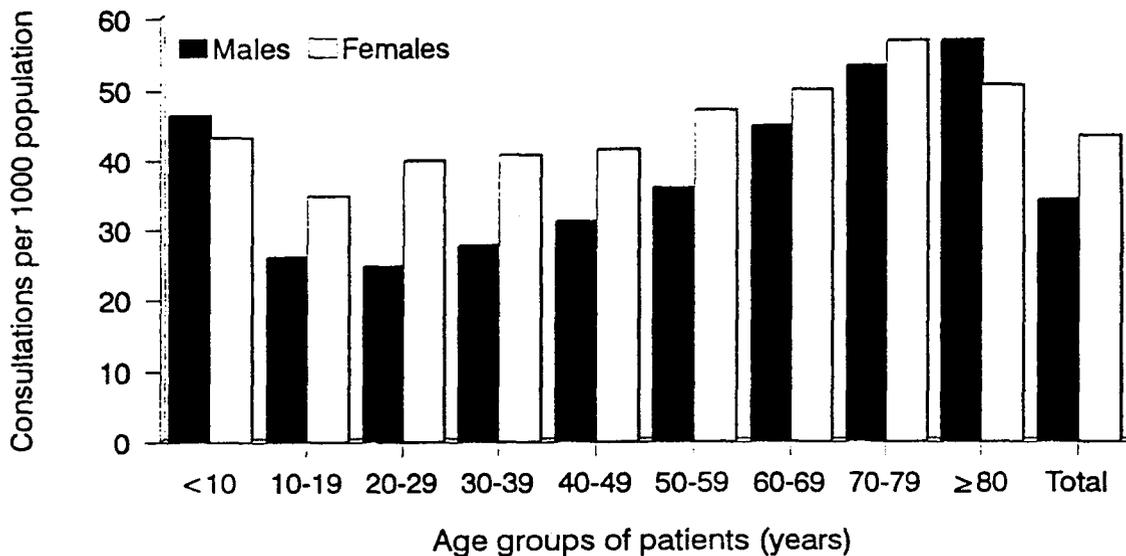


Figure 2. General practice consultations per 1 000 population during one week by age and sex of the patients

4. information concerning patients: age and sex;
5. type of consultation (surgery consultations including on-call consultations, and home visits, excluding phone calls).

Data were analysed using SPSS/PC+ statistical program. Consultation rates were calculated with 95% confidence intervals. The χ^2 -test was used to compare the extent to which male and female patients prefer male and female doctors. Student's t-test was used to test the means between the two groups, and analysis of variance to test the means between several groups. Chief physicians and doctors working in occupational health service were excluded since they have fewer consultations than other doctors because of their professional profiles.

Results

The questionnaire was sent to 1 020 health centre doctors, of whom 851 (83%) completed and returned it. Of the respondents, 413 (49%) were women, and 374 (44%) were under 35 years old. There were 89 (10%) unregistered doctors. In 225 (26%) cases, registration had taken place less than five years previously and in 226 cases (27%) more than fourteen years previously. There were

39 (5%) solo practitioners. Of all the doctors, 271 (32%) worked closer than 20 km from the hospital, and 179 (21%) more than 100 km. Most of the physicians (512; 60%) worked in small municipalities with less than 15 000 inhabitants.

During the study week, 58 760 GP consultations were made, 33 080 (56%) of which were made by women. In addition, 305 home visits were made. The average consultation rate per 1 000 inhabitants per week was 34.2 (95% confidence interval 33.8–34.6) for men and 43.4 (95% confidence interval 43.0–43.9) for women (Table I). For the total number of contacts, a J-shaped association with increasing age was demonstrated for both sexes (Fig.2). In all age groups except the oldest and youngest, consultation rates of female patients were higher than those of male patients, the average for men being 21% lower than for women (Table I, Fig.2). The consultation rate in the age group 70–79 years was almost double that of the age group 10–19 years. Because of the large number of children, their proportion in the total workload was very high; 20% for male and 13% for female patients (Fig.3).

Male patients seemed to prefer male doctors; 47% of the patients of male doctors were males, compared with 40% of the patients of female doctors ($p < 0.001$) (Solo practitioners and those participating in the personal doctor programme

Table 1. General practice consultations by sex and age per 1000 population during one week and one year (estimated).

	Age group (years)								Total	
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79		≥80
MALES										
Population in the study area (thousands)	105	106	106	124	114	82	70	34	12	751
Number of patients consulting	4 882	2 732	2 605	3 415	3 535	2 918	3 114	1 795	684	25 680
Consultation rate per 1000 population/week	46.3	25.9	24.6	27.6	31.0	35.8	44.8	53.3	56.9	34.2
Consultation rate per 1000 population/year ¹	2 887	1 615	1 534	1 721	1 933	2 232	2 793	3 323	3 548	2 132
FEMALES										
Population in the study area (thousands)	101	100	97	113	103	81	81	58	28	762
Number of patients consulting	4 349	3 468	3 878	4 590	4 253	3 799	4 041	3 281	1 421	33 080
Consultation rate per 1000 population/week	43.1	34.6	39.8	40.6	41.4	47.0	49.9	56.8	50.6	43.4
Consultation rate per 1000 population/year ¹	2 587	2 157	2 482	2 531	2 581	2 930	3 111	3 541	3 155	2 706
TOTAL										
Population in the study area (thousands)	206	206	203	237	217	162	150	91	40	1 513
Number of patients consulting	9 231	6 200	6 483	8 005	7 788	6 717	7 155	5 076	2 105	58 760
Consultation rate per 1000 population/week	44.7	29.7	31.9	33.6	35.9	41.3	47.6	55.6	52.5	38.3
Consultation rate per 1000 population/year ¹	2 787	1 852	1 989	2 095	2 238	2 575	2 968	3 467	3 273	2 388

¹ Estimated to 100% response rate.

were excluded from this analysis). Also, female patients seemed to prefer female physicians; 60% of all patients of female doctors were females, compared with 53% of the patients of male practitioners ($p < 0.001$). Patients over 40 years of age seemed to prefer doctors older than 40 years. Sixty % of the patients of these doctors were over 40 years old, compared with 47% of the patients of younger doctors ($p < 0.001$).

The average number of consultations per doctor in a week was 72. There was remarkable variation in consultation rates between doctors (Tables II and III). The consultation rates were lowest among those who were registered over fourteen years previously and those who were specialized in general practice. The consultation rate was slightly lower among female doctors than among males (Table II). A low consultation rate was also found among GPs not participating in the personal doctor programme, and those who worked in municipalities with over 30 000 inhabitants, in the northern part of the study area, and in the smallest health centres (with a population less than 5 800), according to the quintile division of the health centres (Table III). There was a more than twofold variation in the consultation rates between doctors according to quintile division of consultations (46 consultations in the lowest quintile and 95 consultations in the highest quintile).

Discussion

The study area represents the best-organized and best-equipped region of the public primary health care system in Finland (11-13). Partly due to this, the majority (62%) of all doctor consultations in the area are made in health centres, whereas the average for the country as a whole is 55% (14). Our study was carried out during an ordinary autumn season, and consultation rates were at the same level as found earlier in Finland (15, 16).

The highest consultation rates were found among children under 10 years old and among people over 60 years old. Consultation rates of female patients were higher than the corresponding rates for male patients in all age groups, except in the youngest and the oldest ones. The most remarkable difference (1.6 fold) in consultation rates between female and male patients was

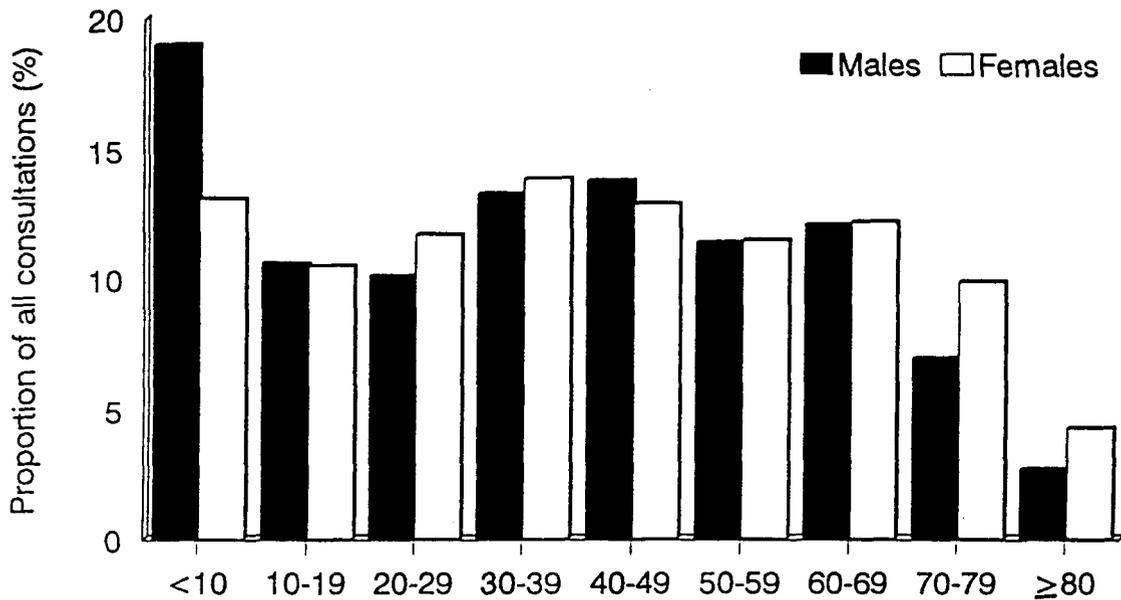


Figure 3. Proportion of consultations by age and sex of the patients.

Table II. General practice consultations during one week by characteristics of general practitioner¹.

	Number of GPs	Consultation/week				P-value ²
		Total	Mean	SD	95% conf. interval	
TOTAL	706	50 898	72	±35.5	69-75	
GP's status						
Health centre doctor	617	44 950	72	±34.5	70-76	NS
Acting health centre doctor	89	5 948	67	±41.5	58-76	
Speciality						
Specialist	137	8 964	65	±35.5	59-71	
Trainee	132	9 510	72	±38.6	69-79	NS
Not specialized	437	32 424	74	±34.3	71-77	p<0.05
Years after registration						
Not registered	89	6 519	73	±41.9	64-82	NS
<5 years	212	15 514	73	±35.4	68-78	NS
5-9 years	114	8 481	74	±29.1	69-81	p<0.05
10-14 years	148	11 087	75	±35.5	69-81	p<0.05
>14 years	143	9 297	65	±34.9	59-71	
Age						
<35 years	351	25 785	73	±36.5	70-77	NS
35-45 years	289	20 803	72	±33.4	68-76	NS
>45 years	66	4 310	65	±38.1	56-75	
Sex						
Female	381	26 491	70	±31.5	66-73	
Male	325	24 407	75	±39.6	71-79	p<0.05

¹ Chief physicians and GPs working in occupational health service are not included in these groups.

² As compared with lowest value.

Table III. General practice consultations during one week by characteristics of practice, health centre, municipality and geography¹.

	Number of GPs	Consultations				P-value ²
		Total	Mean	SD	95% conf. interval	
TOTAL	706	50 898	72	±35.5	69–75	
Participation in the personal doctor programme						
Yes	162	13 093	81	±35.3	75–86	p<0.001
No	544	37 805	69	±35.1	66–72	
Practice h/week ³						
<25 hours	264	16 361	62	±29.0	58–65	
≥25 hours	387	31 540	81	±37.6	78–85	p<0.001
Number of GPs in practice						
1 doctor	35	2 563	73	±32.6	62–84	NS
2–5 doctors	321	23 744	74	±37.2	70–78	NS
>5 doctors	350	24 591	70	±34.2	67–74	
Population of the health centre district (according quintile division ⁴)						
< 5 800 (19 health centre)	49	3 070	62	±28.6	54–71	
5 801–9 700 (18 health centre)	69	4 840	70	±26.6	64–77	NS
9 701–12 300 (19 health centre)	112	8 019	71	±33.6	65–78	NS
12 301–22 000 (18 health centre)	162	12 103	75	±34.0	69–80	NS
22 001– (19 health centre)	314	22 866	73	±39.6	68–77	NS
Population of the municipality						
<15 000	429	30 542	71	±31.4	68–74	p<0.05
15–30 000	105	9 132	87	±51.8	77–97	p<0.001
>30 000	172	11 224	65	±30.2	61–70	
Province						
Middle Finland	127	9 781	77	±40.2	69–84	p<0.05
Kuopio	128	8 757	68	±30.1	63–74	NS
Mikkeli	72	6 221	86	±38.3	77–95	p<0.001
North Karelia	73	5 581	76	±32.2	69–84	p<0.05
Oulu (+part of Vaasa)	222	14 727	66	±33.0	62–71	
Lapland	84	5 831	69	±38.3	61–78	NS
University hospital district						
Kuopio	400	30 340	76	±35.9	72–79	p<0.01
Oulu	306	20 558	67	±34.5	63–71	

¹ Chief physicians and GPs working in occupational health service are not included in these groups.

² As compared with lowest value

³ There were 55 doctors in this group who were working only during weekends.

⁴ Quintile division was made by population of health centre district in the study area.

encountered in the age group of 20–29 years (Fig.2). As clients of maternal health clinics and of well-baby clinics in health centres, women in this age group are accustomed to using the services of health centre doctors for their personal health problems, too. Female patients seem to consult their GPs more frequently than do males in most European countries (1–6). As was found in this study, the doctors' gender seems to influ-

ence consultations, female patients generally preferring female doctors (3, 17, 18).

The mean number of weekly consultations per physician, 72, is remarkably low compared with the consultation rates in other European countries (1). In fact, only Norway has such a low level (1). Accordingly, the time per consultation in Finland (from 15–20 minutes) is usually longer than in most European countries (5,19). Health centre

doctors in Finland also work in the preventive health sector, in well-baby and maternal health clinics; such consultations are not included in the numbers of weekly patient consultations in this study. Moreover, most of the health centres have small local hospitals with 20–30 beds of their own, also run by health centre doctors (8).

The frequency of home visits in this study was one of the lowest in Europe (0.4 visits per week). Even Portugal, with the lowest home visit rate (1.5 visits per week) in the European Referral Study, exceeded this (1). Low home visit rates have also been reported in Iceland (7). One explanation for the low rate is custom, due to the shortage of doctors in Finnish health centres before the 1990s. Another explanation might be an additional characteristic of the Finnish health centre system. Health centres in Finland resemble hospital polyclinics, with good laboratory and x-ray equipment, and salaried doctors working with many assistants (8–13).

Female GPs see different health problems from their male colleagues and also spend more time with their patients (17). This might explain the difference in consultation rates between female and male GPs (Table II). Long distances favour infrequent and long consultations over short and more frequent ones. In northern Finland, fifty km trips to the nearest health centre are not rare. This explains why consultation rates in the northern part of the study area (Oulu University Hospital district) were significantly lower than in the southern part of the study area (Kuopio University Hospital district) (Table III).

The number of consultations of GPs belonging to the personal doctor programme, receiving a salary partially based on capitation fees, exceeded by 17% the number of consultations of traditional salaried physicians. In conclusion, consultation rates per 1 000 inhabitants as well as per GP are remarkably lower in Finland than in most European countries. GP's home visit rates in Finland are also especially low. There seems, then, to be an association between a personal doctor programme system and higher consultation rates.

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