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Reasons for referral from general practice in Finland

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Objective – To examine the reasons for referral from general practice in Finland.

Design – Survey over one week of all referrals from general practice.

Setting – Central and northern Finland, comprising 72% of the area of the country and one-third of the population.

Participants – 851 general practitioners (GPs) from public health centres.

Outcome measures – Referrals by speciality and reasons for referrals by ICD-9 and ICPC codes in terms of characteristics of patients, GPs, and practices.

Results – A higher proportion of male (39%) than female (33%) patients were referred to surgical speciality ($p < 0.001$).

Ten per cent of the patients referred by female GPs were referred to gynaecology departments, compared with 5% of those referred by male GPs ($p < 0.001$). Otitis media in children and abdominal pain in adults were the commonest reasons for referral of both male and female patients.

Conclusion – Our results will be useful in developing the training of GPs with respect to those health problems that most commonly lead to a referral to hospital.

Key words: referral and consultation, primary health care, community health centres, Finland.

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In recent years, there has been an increasing awareness and concern about the wide variations in general practitioners' (GPs') referral rates and the consequent implications for the cost and quality of care (1). However, relatively little information is available on the distribution of referrals between the different specialties and the extent to which this varies. As more sophisticated information systems become available, it is relevant to consider the individual differences in the ways GPs make use of different specialties (2).

In Finland, there is an exceptionally high proportion of young and female doctors: 51% of GPs in health centres are less than 40 years old and 56% are female (3,4). There are a few studies that reveal the distribution of referrals between the different specialties in Finland (5–8), but there is no large, fairly representative picture of referrals in different age groups.

We examined the reasons for referrals to evaluate the variations between different GPs and between patient classes. Further, we wanted to study whether the age and sex of the patients or the sex of the GPs had any effect on the reasons for referral to hospital.

MATERIAL AND METHODS

The study was carried out during one week (30 November – 6 December 1992) in central and northern Finland. The study area comprised 72% of the country, with a population of 1.5 million people out of the total Finnish population of 5 million. There were 1020 GPs working

in 97 health centres in the region. Patients could be referred to seven regional hospitals, eight central hospitals, and two university hospitals (Kuopio and Oulu).

A questionnaire was sent to all GPs in the study area; they were asked to record:

1. The personal data of the doctor: age, sex, date of registration, speciality and professional status.
2. The characteristics of the practice: size of the health centre, number of doctors working in the practice, their workload and the opportunities to consult a specialist in that health centre.
3. Data about the local community: size and distance to the nearest hospital.
4. Information concerning the patients: age and sex.
5. Type of consultation (surgery or home visits, excluding GPs' contacts in healthy baby clinics, schools, occupational health, health centre ward, by phone calls).
6. Information concerning all referrals: reasons (diagnosis) for referral, age and sex of referred patients, referral hospital, speciality, type of referral (emergency or normal) and the patient's desire to be referred.

Diagnoses were coded with the International Classification of Primary Care (ICPC) (9), and with the codes of the International Classification of Diseases (ICD-9). The data were analysed using an SPSS/PC+ statistical program. The chi-square test was used to test statistical probabilities of differences in proportions between

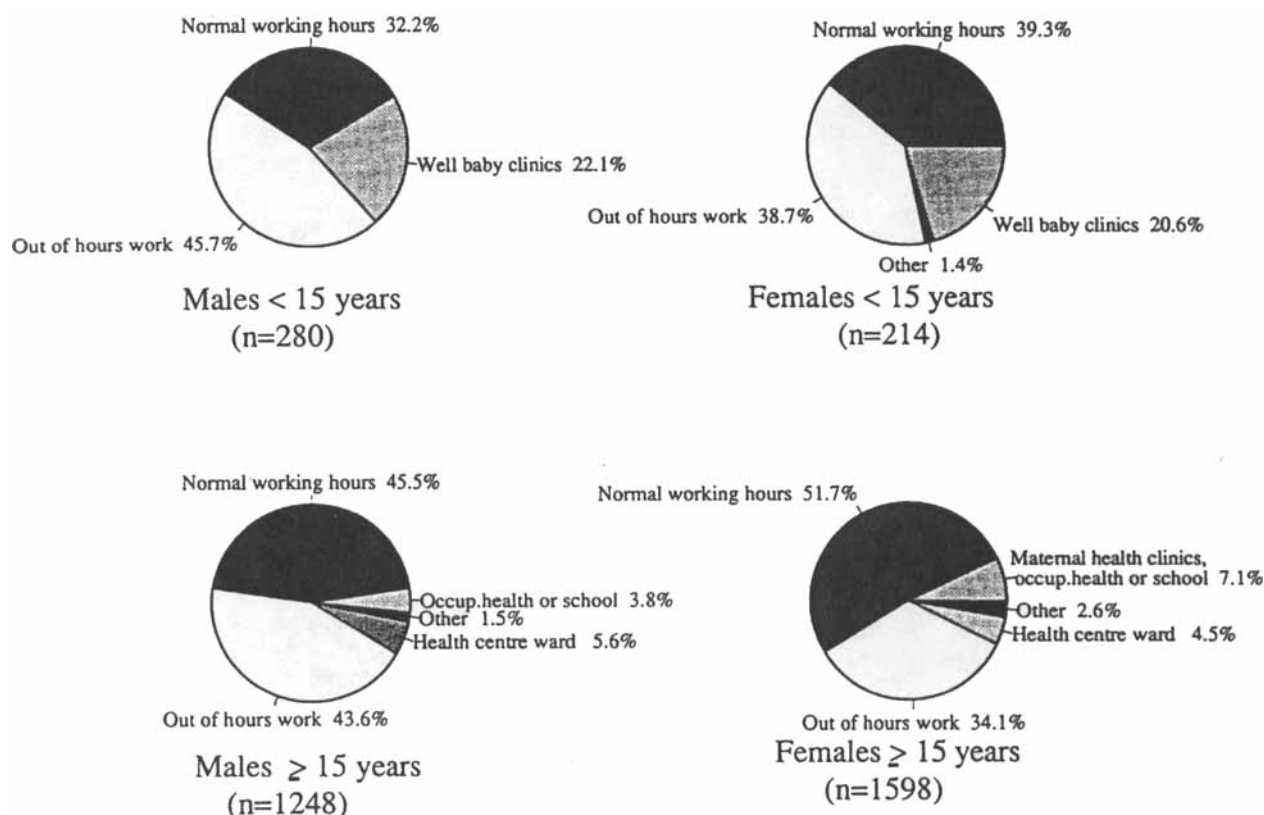


Fig. 1. Distribution of referrals from various sectors of health centre by age and sex of patient.

groups, and analysis of variance to test statistical probabilities of differences in the means between groups.

RESULTS

The questionnaire was sent to 1020 GPs, 851 (83%) of whom responded: 413 (49%) were women, and 374 (44%) were under 35 years old. Female GPs were on average 2.8 years younger than male GPs ($p < 0.001$). There were 89 (10%) medical students who were not yet registered and who were working as locums.

During one week, 3406 patients were referred to hospitals. Of them, 2921 (86%) were referred during normal or out of hours consultations, 278 (8%) from healthy baby clinics, school or occupational health work, 155 (5%) from health centre wards, and 52 (1%) in other ways (home visit, phone call, etc.). More male (44%) than female (34%) patients aged 15 years or over were referred during out of hours work ($p < 0.001$). A similar difference was also discernible in young patients aged less than 15 years (males 46%, females 39%) ($p < 0.05$) (Fig. 1).

More of the patients referred from normal consultations (36% of referred patients) or from healthy baby clinics, school or occupational health work (34% of

referred patients) had themselves requested referral than either the patients referred from out of hours consultations (16% of referred patients) or from health centre wards (15% of referred patients) ($p < 0.001$).

Of the 3406 patients, 1579 (46.4%) were referred to surgical specialities (otorhinolaryngology, surgery, and ophthalmology), 1377 (40.4%) to medical specialities (dermatology, neurology, internal medicine, respiratory medicine and paediatric medicine), and 430 (12.6%) to other specialities (obstetrics, gynaecology, psychiatry, oncology and rehabilitation). In 20 cases (0.6%), the speciality was not specified.

More male patients (39% of referrals for male patients) than female patients (33%) were referred to surgical departments ($p < 0.001$). The difference was most obvious in the age group 60 to 79 years old. Male patients were also two times more likely to be referred to paediatric departments than female patients ($p < 0.001$) (Table I).

Between female and male GPs there were differences both in age of the patients and distribution of specialities. The mean age of patients referred by female GPs was 42 years (SD ± 23.2 , 95 CI 41–43), compared with a mean age of 46 years (SD ± 23.4 , 95 CI 44–47) for those patients referred by male GPs ($p < 0.001$). Ten per cent (160 patients) of the patients referred by female GPs

Table 1. Referral rates per 1000 consultations during normal plus out of hours consultations over a one week period by speciality and by age and sex of the patients.

Speciality	Age group											
	0-19		20-39		40-59		60-79		80-		All	
	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
Surgery	6.4	6.6	16.3	24.4	18.8	25.9	17.6	27.3	26.0	30.7	15.3	20.2
Internal medicine	1.5	0.7	5.7	8.8	10.6	14.7	17.5	22.0	31.7	21.9	9.6	10.7
Paediatrics	11.9	18.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6	10.7
Gynaecology	1.4	0.0	15.4	0.0	8.1	0.0	3.0	0.0	1.4	0.0	6.9	0.0
Ear, nose and throat	5.2	6.2	2.7	4.0	3.6	5.1	3.7	5.5	0.7	1.5	3.7	5.1
Neurology	0.6	0.4	1.8	3.7	2.4	3.9	3.3	3.1	4.9	8.8	2.1	2.8
Ophthalmology	1.3	1.2	0.9	4.2	1.9	2.0	2.6	2.2	2.1	2.9	1.7	2.3
Respiratory	0.3	0.3	1.8	1.3	2.0	2.5	2.2	2.9	1.4	5.8	1.5	1.7
Psychiatry	0.1	0.0	1.1	4.5	1.2	1.7	0.1	0.6	0.0	0.0	0.6	1.6
Dermatology	0.6	1.4	1.2	1.0	1.5	1.4	1.1	0.8	2.1	0.0	1.1	1.2
Other ¹	0.0	0.0	0.9	0.5	1.5	1.1	1.0	1.0	0.7	1.5	0.8	0.6
Not known	0.0	0.1	0.0	0.0	0.5	0.2	0.4	0.0	0.7	0.0	0.2	0.1
All	29.4	34.9	47.7	52.3	51.9	58.4	52.4	65.4	71.8	73.1	46.5	51.8

¹ Oncology, Rehabilitation and Neurosurgery.

Table II. Referral rates per 1000 consultations during normal plus out of hours consultations over a one week period by ICD-9 main codes and by age and sex of the patients.

Speciality		Age group											
		0-19		20-39		40-59		60-79		80-		All	
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male
I	Infection	0.5	1.3	0.5	0.5	0.7	0.9	0.3	0.2	0.7	1.5	0.5	0.8
II	Tumour (140-239)	0.6	0.3	1.3	0.8	3.4	2.0	3.0	2.9	0.0	0.0	2.0	1.3
III	Endocrinology (240-279)	0.1	0.4	0.8	0.2	1.0	0.5	1.0	0.2	2.1	2.9	0.8	0.4
IV	Blood (280-289)	0.0	0.1	0.1	0.2	0.1	0.2	0.8	0.2	0.7	1.5	0.3	0.2
V	Psychiatric (290-319)	0.1	0.3	1.1	3.8	1.2	1.9	0.4	0.4	0.7	1.5	0.7	1.6
VI	Nervous and sensory organ	4.1	4.6	1.9	4.7	3.6	5.1	4.8	6.5	2.1	4.4	3.5	5.1
VII	Circulation (390-459)	0.8	0.3	3.5	3.8	5.0	9.0	10.0	11.8	23.2	14.6	5.5	5.9
VIII	Respiratory (460-519)	4.9	7.6	3.0	2.8	3.1	2.6	3.3	4.7	2.8	2.9	3.5	4.6
IX	Digestive (520-579)	3.1	3.0	2.8	4.2	3.5	7.6	4.0	8.8	7.0	4.4	3.5	5.6
X	Urinary (580-629)	1.4	1.4	6.7	0.7	5.0	1.2	2.6	5.9	1.4	7.3	3.9	2.2
XI	Pregnancy (630-676)	0.6	0.0	5.7	0.0	0.9	0.0	0.0	0.0	0.0	0.0	1.8	0.0
XII	Skin (680-709)	0.9	1.4	1.4	1.2	1.5	1.7	0.8	0.4	0.7	0.0	1.1	1.2
XIII	Musculoskeletal (710-739)	1.4	0.7	2.8	6.0	5.2	7.7	3.3	2.4	1.4	0.0	3.1	4.0
XIV	Congenital (740-759)	0.3	0.3	0.2	0.0	0.2	0.0	0.1	0.0	0.7	0.0	0.2	0.1
XV	Perinatal mortality (760-779)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
XVI	Symptoms (780-799)	7.5	6.8	9.6	10.8	11.2	11.6	11.5	16.1	16.2	19.0	10.2	11.1
XVII	Trauma (800-999)	3.1	6.4	4.5	12.8	5.7	6.2	6.7	4.9	10.6	13.2	5.2	7.7
XVIII	Other (V)	0.0	0.0	1.8	0.0	0.6	0.2	0.0	0.0	1.4	0.0	0.7	0.0
All		29.4	34.9	47.7	52.3	51.9	58.4	52.4	65.4	71.8	73.1	46.5	51.8

were referred to gynaecology departments, compared with 5% (69 patients) of the patients referred by male GPs ($p < 0.001$).

According to the ICD-9 codes, male patients were referred for different reasons than female patients in several categories (Table II). Thus, for example, male

patients were almost three times more likely to be referred in the age group 20-39 years for trauma, compared with female patients.

According to the ICPC codes, there were clear sex differences in the commonest reasons for referral (Table III). Although otitis media in children and abdominal

pain in adults were the commonest reasons for referral for both males and females, there were differences in the distribution of other reasons according to both the age and the sex of the patient.

More patients were referred during out of hours periods than during normal working hours to psychiatric (78% of all patients to psychiatric department), paediatric (63%), surgical (53%), and internal medicine (53%) departments. Most referrals to other departments were made during normal working hours.

In the quintile groupings subdivided according to the population served by the health centre, 31% of patients referred from the smallest health centres (with less than 5800 inhabitants) were referred during out of hours consultations, compared with 48% of patients referred from the largest health centres serving more than 22 000 inhabitants ($p < 0.001$).

DISCUSSION

The study reported here provides large and representative data from Finnish health centres. Our study was carried out during an ordinary autumn season, the response rate was high (83%), and the dropouts consisted of all types of doctors and practices, not differing from the responders. The advantage of this type of study is that it permits an analysis of patterns of referral across health centres. It can therefore provide a large, fairly representative picture of referrals in different age groups.

In our earlier study we showed that the average Finnish health centre GP performed only one home visit every two weeks (10). This paucity of home visits was also reflected in the small number of referrals (5%, 16 referrals) made during home visits. In the present study, contacts made in other sectors (health centre ward, school, phone calls, occupational health and healthy baby clinics) were not recorded because those contacts are different from the situation in which the patient is seen by the doctor for some health problem. Patients from those sectors, for example from maternal and healthy baby clinics, are mainly referred to paediatric and gynaecology departments. National cultural and health care differences also make comparisons between countries difficult if other sectors are collected together to estimate referral rates per consultation. Therefore, referrals resulting from normal or out of hours work are the main concerns of the present study.

In our study, the distribution of referrals between major speciality group (surgical 46.4%, medical 40.4%, and other 12.6%) was similar to that found in the European referral study in Switzerland (surgical 45.0%, medical 43.0%, and other 12.0%) (11). In Norway, the proportion of surgical referrals (46.0%) was also similar, although the proportion of medical referrals (33.8%) was less than in Finland.

Table III. Ten most commonly occurring problems referred to hospital from normal and out of hours consultations by age and sex of the patient.

	<15 years				≥15 years			
	Males (n=232)	Females (n=178)	Males (n=1097)	Females (n=1360)	Males (n=1097)	Females (n=1360)	Males (n=1097)	Females (n=1360)
	Reason for referral (ICPC code)	Reason for referral (ICPC code)	Reason for referral (ICPC code)	Reason for referral (ICPC code)	Reason for referral (ICPC code)	Reason for referral (ICPC code)	Reason for referral (ICPC code)	Reason for referral (ICPC code)
	%	%	%	%	%	%	%	%
1	Otitis media (H74)	Otitis media (H74)	Generalized abdominal pain (D01)	Generalized abdominal pain (D01)	Generalized abdominal pain (D01)	Generalized abdominal pain (D01)	Generalized abdominal pain (D01)	Generalized abdominal pain (D01)
2	Asthma (R96)	Pneumonia (R81)	Angina pectoris (K74)	Angina pectoris (K74)	Angina pectoris (K74)	Asthma (96)	Asthma (96)	Asthma (96)
3	Bronchiolitis (R78)	Headache (N01)	Inguinal hernia (D89)	Inguinal hernia (D89)	Inguinal hernia (D89)	Varicose veins of leg (K95)	Varicose veins of leg (K95)	Varicose veins of leg (K95)
4	Fever (A03)	Generalized abdominal pain (D01)	Fracture: other (L76)	Fracture: other (L76)	Fracture: other (L76)	Periph. vascular disease (K92)	Periph. vascular disease (K92)	Periph. vascular disease (K92)
5	Generalized abdominal pain (D01)	Asthma (R96)	Dislocations (L80)	Dislocations (L80)	Dislocations (L80)	Angina pectoris (K74)	Angina pectoris (K74)	Angina pectoris (K74)
6	Sinusitis acute/chronic (R75)	Sinusitis acute/chronic (R75)	Periph. vascular disease (K92)	Periph. vascular disease (K92)	Periph. vascular disease (K92)	Lump/mass breast (X19)	Lump/mass breast (X19)	Lump/mass breast (X19)
7	Inguinal hernia (D89)	Appendicitis (D88)	Pain attributed to heart (K01)	Pain attributed to heart (K01)	Pain attributed to heart (K01)	Appendicitis (D88)	Appendicitis (D88)	Appendicitis (D88)
8	Concussion (N79)	Fever (A03)	Atrial fibrillation (K78)	Atrial fibrillation (K78)	Atrial fibrillation (K78)	Fracture: other (L76)	Fracture: other (L76)	Fracture: other (L76)
9	Pneumonia (R81)	Cough (R05)	Asthma (R96)	Asthma (R96)	Asthma (R96)	Fracture: radius/ulna (L72)	Fracture: radius/ulna (L72)	Fracture: radius/ulna (L72)
10	Appendicitis (D88)	Other injury (L81)	Other disease of the digestive system (D99)	Other disease of the digestive system (D99)	Other disease of the digestive system (D99)	Atrial fibrillation (K78)	Atrial fibrillation (K78)	Atrial fibrillation (K78)
	Proportion of all referrals in sex and age group	47.7	36.4	36.4	18.6	18.6	18.6	18.6
								17.9

It has recently been demonstrated that health problems presented by health centre patients show a clear sex difference (12). In our study this difference was also noticed in the reasons for referrals (Table III).

Using ICPC even the commonest diagnoses of adult patients (aged 15 years or over) did not account for more than 2.5% of referrals of males and 2.9% of females. A similar result has been found in the reasons for consultations from primary care in Norway (13). However, for children the commonest diagnosis accounted for 8.7% of males and 7.2% of females, and the ten most common diseases accounted for nearly half (48%) of the reasons for referring boys to hospital.

The patients referred by female GPs tended to be younger than those referred by their male colleagues. In our study, female GPs were on average three years younger than male GPs, and they referred patients who were on average five years younger than patients referred by male GPs. Female patients experience more illness than men (14) and prefer to be treated by female doctors (10,15,16). We have also observed previously that female GPs have higher referral rates than male GPs (17) and that female GPs working with a list system referred more patients during normal work than female GPs working without a list of patients (18). In the present study there were differences in the specialities and problems of the male and female patients referred by male and female GPs. This may be due to different health problems seen by male and female GPs. This diagnostic case mix also influences the referral rates (19). However, more research is needed to analyse differences in the case content of consultations made by male and female GPs.

One advantage of this type of study is that an examination of patterns of use of outpatient departments could be one way of improving collaboration between GPs and specialists, especially in the development of protocols for managing specific common disorders (1). It can pinpoint those areas where GPs require further training, and this could lead to more patients being treated in primary health care, thus reducing the number of referrals and the resulting cost of health care.

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