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ORIGINAL ARTICLE

Minor ailments in out-of-hours primary care: An observational study

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Abstract

Background. Many consultations are partly or totally spent on minor ailments. A minor ailment is defined as a health complaint which, by simple actions, patients could handle themselves. *Objective*. To investigate the prevalence, type of conditions, and time spent on minor ailments in consultations in out-of-hours care in Norway. *Design and setting.* An observational study of consultations at six out-of-hours primary care centres was carried out during evenings and weekends in November and December 2008. Main outcome measures were number and type of minor ailments, as well as consultation time. The minor ailments were predefined by a list of conditions. Conditions which, by certain pre-set criteria, still needed a doctor's professional advice were reclassified as "no minor ailment". *Results.* A total of 210 consultations were observed. The patients' mean age was 28 years (range 0–94). Cough, fever, sore throat, upper respiratory tract infection, and earache contributed 76% of the 211 minor ailments registered. After reclassification, 58 (28%) of the 210 consultations registered were classified as partly or totally a minor ailment. These minor ailments represented 18% of the doctors' total consultation time in the 210 observed consultations. *Conclusion.* More than a quarter of the observed consultations were partly or totally spent on addressing minor ailments. This shows a potential for empowering patients to rely on self-care also for minor ailments in out-of-hours primary care.

Key Words: *Observation, out-of-hours medical care, self care*

Minor ailments (MA) contribute to a considerable amount of the total workload for general practitioners and thereby represent poor utilization of doctors' resources [1–5]. A British study of consultations in general practice showed that doctors classified 7% of the consultations as "unnecessary", and that the minor ailments could be handled by a pharmacist [6].

In Norway, the purpose of primary care out-of-hours emergency services is to assess contacts regarding need for immediate medical care and to perform essential diagnostics and treatment for acute illness or injury [7]. Trained nurses usually prioritize each patient by severity into the colours red, yellow, and green (triage) according to the Norwegian Index for Medical Emergency Assistance [8]. Red represents an "acute" response for a life-threatening condition with the highest priority. Yellow is defined as an "urgent" response, which should lead to clinical assessment without much delay. Green is given to a contact that can wait until a physician is otherwise available (often hours) or where the patient should preferably visit a general practitioner (GP) the following day ("not urgent" response). Nearly 80% of all contacts in Norwegian out-of-hours care are in the green category [9].

Norwegian research on minor ailments has not been found, either concerning general practice or out-of-hours care. We consider it to be of interest to investigate whether patient contacts for minor ailments, from a doctor's perspective, constitute a potential area for improvement of the out-of-hours care in Norway, both for the service of the patients and in order to make better use of the scarce resources in terms of doctors.

Minor ailments have been defined in several ways in the literature [1]. Some studies have defined minor ailments according to a list of 12 conditions as a reflection of available over-the-counter (OTC) drugs,

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Minor ailments are conditions which, with simple actions, patients could handle themselves.

- In all, 28% of the observed consultations in out-of-hours primary care were partly or totally spent on addressing minor ailments.
- There is a significant potential for reducing time spent on counselling patients seeking help for minor ailments by empowering patients to rely increasingly on self-care.

or as a reflection of pharmacists' extended permission to dispense prescription drugs ("care at the chemist" scheme) [10,11]. In the present study we have chosen the following definition of minor ailment: *A health complaint which, with simple actions, patients can handle themselves.* Simple actions in this context are self-care which does not involve a doctor; for instance seeking advice in a pharmacy, asking acquaintances, taking OTC drugs, staying in bed, or using self-certified work absence.

The aim of the study was to investigate the prevalence, type of conditions, and time spent on minor ailments in consultations in out-of-hours care in Norway.

Material and methods

The municipalities in Norway are by law in charge of organizing primary health care for all inhabitants 24 hours a day, including general practice and local emergency medical services. The emergency medical service is usually managed by the GPs' surgeries during the office hours and by municipality-maintained out-of-hours duties by GPs during evenings, nights, and weekends, often based in local casualty clinics [12].

This study was performed using observations of consultations in six out-of-hours primary care centres in Hordaland County, Norway, covering an area with 328 000 inhabitants. Power analysis showed that based on an estimate of 10% of the consultations spent on MA, the observation of a total of 210 consultations would give a 95% CI of 0.07–0.15 with 80% power. The observations were carried out during evenings and weekends in November and December 2008. All patients, not critically ill, aged 16 or older who were able to give written consent, or children with parents able to give their consent to participation, were eligible for inclusion. The patients had to be present at the out-of-hours care centre at the same time as the observer. The observer (LKWN) is both a physician and a pharmacist. She did not have access to medical records. The nurses present at the time for observation handed out written information to all eligible patients, and collected signed consent forms. The doctor was instructed to work as usual during the consultation with no interference from the observer. The doctors informed the observer of the patients' year of birth.

Measures

An observation manual with 33 conditions fulfilling our definition of minor ailments was used. Parts of this manual consisted of conditions previously categorized as minor ailments in the literature. Additionally we adjusted the list according to common counselling provided in Norwegian pharmacies and non-prescription drugs on the European market, as the list of non-prescription drugs in Norway differs from those in many other countries (Table I). The observer used a form to register weekday, the patient's gender and year of birth, and the conditions of minor ailments according to the manual. Complicating factors related to the minor ailments that justified the need for a doctor's appointment were also registered. Examples are recent hospitalization and relevant comorbidity to the minor ailment. The observer used the following list of criteria to identify health complaints which the patients could not handle themselves:

- Is the patient born in 2008? (i.e. $<$ 1 year old).
- Does the patient have a considerably reduced general condition?
- Does the doctor give the patient prescription drugs?
- Are there complicating factors to the minor ailment presented?
- Are there important administrative and/or social medical aspects related to the minor ailment presented?

When the answer to one or more of these questions was "yes", the consultation was classified as "MA reclassified to other conditions". If not, the consultation was confirmed to address a minor ailment (i.e. "concluded MA").

Time spent on minor ailments and total consultation time were registered in all the consultations observed. For the consultations not observed ($n = 20$) we only registered total consultation time. The manual and observation form was piloted in five consultations. As no further adjustments were deemed necessary, these five consultations were included in the main study.

SPSS version 15.0 was used for descriptive data and frequency analysis. Pearson's chi-squared tests

Table I. Minor ailment list in the observation manual.

Allergic rhinitis
Aphthae
Arthritis
Athlete's foot
Cerumen
Constipation
Cough
Diarrhoea
Dyspepsia
Earache
Erectile dysfunction
External otitis
Fever
Gastric flu
Headache
Head lice
Haemorrhoids
Influenza-like symptoms
Intestinal worm in children
Leg ulcer
Migraine
Mild eczema
Mild musculoskeletal problems
Mouth ulcer
Nausea
Overweight
Plantar wart
Post coital contraceptives
Prevention of urinary tract infections
Sore throat
Sting/bite
Upper respiratory tract infection
Vaginal thrush

were used for statistical analyses. The level of significance was set to 95% ($p < 0.05$). The project was approved by the Regional Committee for Medical Research Ethics and the Norwegian Social Science Data Services.

Results

A total of 210 consultations were included in the observational study, and 20 were not. Among the 20 consultations not included, 12 patients were critically ill and not eligible for observation and eight patients did not consent to observation (Figure 1). Some 11 doctors participated with on average 15 included consultations daily. All 230 consultations were included in the measurement of time spent on consultation. Among the 210 patients observed, 88 were men and 122 were women, the age range was 0–94 years, and mean age was 28 (SD 24) (Table II). Among all consultations, there was no statistically significant difference in age between men and women, but significantly more women than men were in the age group 21–40 years ($p = 0.032$). A third of the patients were children, while 29.6% were aged between 21 and 40 years. Age was missing for two patients.

The minor ailments

In 114 (54%) of the 210 consultations, a total of 211 minor ailments were registered, presented by 52 men and 62 women (Table III). After classifying the 114 consultations to "concluded MA" or "MA reclassified to other conditions", 58 consultations (28% of all observed consultations) were "concluded MA" (see Figure 1), comprising 29 men and 29 women. There were more children under 18 years of age than adults ($p < 0.001$). "Concluded minor ailments" took up 18% of the doctors' total consultation time. The overall average consultation time was 13 minutes.

Some 22 of the 33 MAs from the observation manual were registered in this study. Table III shows eight MAs that coincide with lists of 12 conditions as a reflection of available over-the-counter (OTC) drugs. The "other" group represents the remaining MAs from our observation manual (see Table I), for example gastric flu, mild musculoskeletal problems, and nausea. The number of minor ailments registered in each consultation varied from one to four. Forty-five consultations had one MA, 46 had two, 18 had three, and five consultations had four MAs. All patients with more than one minor ailment presented only one reason for encounter when contact was made with the out-of-hours care services. The different minor ailments registered were in these cases parts of the same overall condition leading to the consultation. Cough, fever, sore throat, upper respiratory tract infection, and earache made up 160 (76%) of the minor ailments. Cough was the most frequent minor ailment, either as a single complaint, or in combination with other ailments.

Discussion

In this study we found that 28% of the 210 observed consultations in out-of-hours primary care were partly or totally spent on minor ailments which the patients could with simple actions have handled themselves. The high prevalence of minor ailments suggests that there is a significant potential in certain conditions to empower patients to rely on self-care.

The presence of the observer in the consultation room may have influenced the patient, the doctor, or other members of the staff in this study [13]. It might have had less impact on the course of the consultation if the study had used audio- or video-recording. However, this would have demanded more time and effort both of the researcher and of the doctor in the emergency service context, and would thereby probably recruit fewer doctors to participate. It is our opinion that the observed doctors appeared confident. In addition the patients were informed that the observer was also a physician, to ensure confidentiality. The

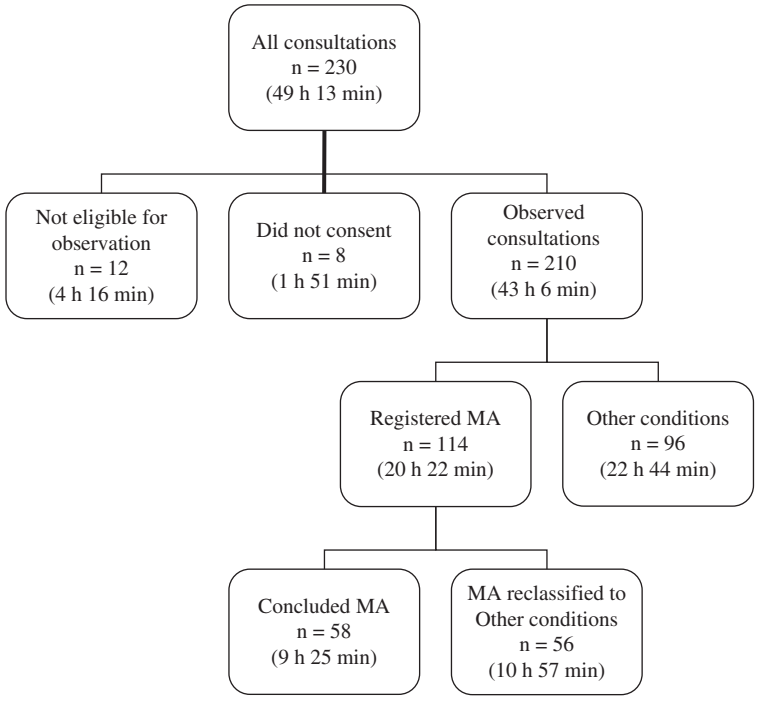

Figure 1. Flow chart of all consultations and total time spent.
Note: MA = minor ailment.

strength of the study is that all the observations were carried out by the same observer. This ensures the same basic assessments in all consultations.

Consultation rates by age groups are comparable with population statistics, except the age-group 0–4 years [14], which represents a larger share in our material than in other studies of out-of-hours contacts in Norway [15]. We know that some of the out-of-hours care centres in this study are sited in areas with many young children. Young adults, normally considered a healthy part of the population, also formed a large group among the patients. One explanation for this could be that they perhaps have a lower threshold for seeking help than the older part of the population.

Table II. Distribution of patients shown by age groups and gender (n = 210).

Age group (years)	Men	Women	Total	%
0–10	34	34	68	32.4
11–20	9	10	19	9.0
21–30	5	20	25	12.0
31–40	14	23	37	17.6
41–50	7	10	17	8.1
51–60	9	10	19	9.0
61–70	6	6	12	5.7
71–80	1	3	4	1.9
> 80	2	5	7	3.3
Age missing	1	1	2	1.0
Total	87	121	210	100

Significantly more women than men in the ages between 21 and 40 presented at the out-of-hours consultations. Statistics from Norwegian out-of-hours services have shown that women have the highest contact rate in all age groups except below 10 [16].

Cough, fever, sore throat, upper respiratory tract infection, and earache were the most frequent minor ailments. The study was conducted during November and December, a time of year when such ailments are

Table III. All minor ailments registered (n = 211) and concluded (n = 101) during 114 consultations for minor ailments.[1]

	Registered MA	Concluded MA for each condition	
Minor ailments	n	n	%
Constipation	1	0	0
Cough	55	20	36
Diarrhoea	2	2	100
Earache	15	11	73
Fever	41	13	32
Headache	6	2	33
Sore throat	26	11	42
Upper resp. tract infection	23	9	39
Other	42	33	79
Total	211	101	48

[1]Percentage of concluded MA showed as fraction of all registered MA by condition.

common. The results are therefore not necessarily representative of contacts with the out-of-hours emergency services throughout the year. Yet, there is reason to expect that other minor ailments would be overrepresented at other times of the year, i.e. hay fever in springtime. It is important to notice that the most frequent minor ailments found in this study are all conditions where quick assessments and some treatment could be needed. It is therefore expected that a certain number of such consultations take place in out-of-hours emergency services, but perhaps not as many as shown in this study.

The doctors spent 18% of their consultation time dealing with minor ailments. This is the same as reported by the Proprietary Association of Great Britain and is probably acceptable in a primary care setting [3]. However, the British report is based on research in general practice, and not emergency primary health care. We would have expected less time spent on minor ailments in out-of-hours care due to the fact that this is a service dedicated to acute illness and injuries. The relatively high prevalence of "concluded MA" in out-of-hours care might indicate that patients use the emergency service as an equal alternative to the GP. Based on the general agreement that the fraction of "not urgent" contacts in out-of-hours care is too high, the number might be reduced by reducing the number of consultations for minor ailments.

Almost half of the consultations for minor ailments according to our predefined list were reclassified to relevant reasons for encounter. This indicates that minor ailments defined by lists of conditions only probably have low validity as a measurement of definitely "unnecessary" consultations. An alternative approach to a list of minor ailments is to ask the doctor about unnecessary consultations, as done in other studies [6]. However, this introduces another validity problem, as doctors may have different opinions concerning what constitutes a minor ailment. Further studies with validated MA lists are needed.

The high prevalence of minor ailments in out-of-hours primary health care might be understood as a lack of structured and acknowledged information to patients and also as poor access to GP consultations during the daytime. Relevant information could partly be given through public campaigns, by health education in child health clinics and by GPs. The latter also have an important role in preventive medicine during regular contact with patients as well as informing their patients about how and when to use out-of-hours care properly. In some situations, however, reliance on self-care will be inadequate. Patients who have unsuccessfully tried to treat a fever or cough may be worried about more serious conditions and therefore want to rule out such options by seeing a doctor [17]. Nevertheless, patients should be encouraged to use their GPs as the primary choice for medical help if the condition is not acute and serious. Increased access to emergency consultations available during the daytime may reduce the pressure on out-of-hours primary health care. However, further investigations of the effects of interventions for this are needed.

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Declaration

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Conflicts of interest: None.

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