



**USE OF**  
**OUT  
OF  
HOURS  
PRIMARY  
CARE**

UNDERSTANDING AND INFLUENCING PATIENTS' HELP-SEEKING



# Use of out-of-hours primary care

Understanding and influencing patients' help-seeking

For reasons of consistency within this thesis, some terms have been standardised throughout the text. As a consequence the text may differ in this respect from the articles that have been published.

The studies presented in this thesis have been performed at the Scientific Center for Quality of Healthcare (IQ healthcare). This center is part of the Radboud Institute for Health Sciences (RIHS), one of the approved research institutes of the Radboud university medical center.

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# Use of out-of-hours primary care

Understanding and influencing patients' help-seeking

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Promotor: Prof. dr. M.J.P. Wensing

Copromotoren Dr. M. Smits  
Dr. P.H.J. Giesen

Manuscriptcommissie: Prof. dr. J.R.L.M. Wolf  
Prof. dr. F.G. Schellevis (Vrije Universiteit)  
Prof. dr. D.M.J. Delnoij (Tilburg University)

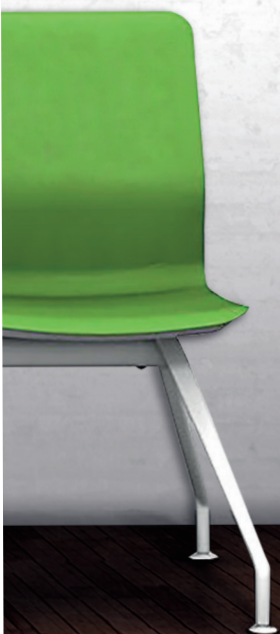
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## Chapter 1

### General introduction



## BACKGROUND

### Organisation and use of out-of-hours primary care in the Netherlands

The organisation of out-of-hours care differs around the world and is changing fast in many countries.<sup>1,2</sup> In the Netherlands, in case of an emergency during out-of-hours, patients can call an ambulance (112), visit the Emergency Department (ED) of a hospital or contact a general practitioner (GP) cooperative. When the symptoms are not severe, the preferred service to contact, from a medical and cost perspective, is the GP cooperative. In the Netherlands, out-of-hours primary care is organised in large scale GP cooperatives.<sup>3,4</sup> GP cooperatives were set up around the year 2000 because of the low personal commitment of GPs to be on call 24/7 due to high workload, increasing patient demand for out-of-hours care, and expected shortage of GPs.<sup>1,4</sup> GP cooperatives are intended for urgent help requests that cannot wait until the regular consultation hours of the general practice. The number of patient contacts at GP cooperatives has increased up to 4.1 million contacts in 2015 (245 contacts per 1,000 inhabitants per year).<sup>5</sup> Nowadays, a large part of the GP cooperatives are located near a hospital.<sup>3</sup> Key features of GP cooperatives in the Netherlands are listed in **Table 1**.

**Table 1. Features of general practitioner (GP) cooperatives in the Netherlands and charging system<sup>3,5,6</sup>**

Theme	Feature
<b>General</b>	<ul style="list-style-type: none"> <li>• Out-of-hours primary care has been provided by large-scale general practitioner (GP) cooperatives since the year 2000</li> <li>• Every GP has to do a minimum number of shifts at the GP cooperative to maintain his/her registration as a GP</li> <li>• Participation of 50–250 GPs per cooperative with a mean of 4 hours on call per week with a compensation of about €65/hour</li> <li>• About 120 GP cooperatives in the Netherlands</li> <li>• Population of 100,000 to 500,000 patients with an average care consumption of 250 contacts/1,000 inhabitants per year</li> <li>• Out-of-hours defined as daily from 5 p.m. to 8 a.m., all public holidays and the entire weekend</li> <li>• Patients are classified in urgency categories from high to low urgency (U1:2% U2:15% U3:38% U4:18% U5:27% in 2015)</li> <li>• Per shift GPs have different roles: supervising telephone triage, doing centre consultations or home visits</li> <li>• The triage is supervised by telephone consultation doctors who can be consulted in case of doubt, while also checking and authorising all calls</li> </ul>
<b>Location</b>	<ul style="list-style-type: none"> <li>• GP cooperative are usually situated in or near a hospital's emergency department (ED).</li> <li>• Distance of patients to GP cooperative is 30 km at most</li> </ul>
<b>Accessibility</b>	<ul style="list-style-type: none"> <li>• Access via a single regional telephone number, meaning the first contact is mostly with a triage nurse (only 5–10% walk in without a call in advance)</li> <li>• Telephone triage by nurses supervised by GPs: contacts are divided into telephone advice (38%), centre consult (52%), or GP home visit (9%)(2015)</li> </ul>

Theme	Feature
<b>Facilities</b>	<ul style="list-style-type: none"> <li>• Home visits are supported by trained drivers in identifiable fully equipped GP cars (e.g. oxygen, intra venous drip equipment, automated external defibrillator, medication for acute treatment)</li> <li>• Information and communication technology (ICT) support including electronic patient files, online connection to the GP's car, and sometimes connection with the electronic medical record in the GP's daily practice</li> </ul>
<b>Charging system</b>	<ul style="list-style-type: none"> <li>• Healthcare is largely covered by health insurance</li> <li>• All residents over 18 years pay a monthly premium to their health insurance provider. There is no premium for children</li> <li>• Employers pay a part of their employee's income to the tax administration for healthcare costs</li> <li>• Patients do not have to pay an additional amount for GP care, both during and outside office hours</li> <li>• Residents over 18 years pay an annual deductible (375 euro in 2015) in case of use of healthcare (including emergency departments). This deductible is neither applicable to GP care, nor to children</li> </ul>

At the GP cooperative, nurses perform telephone triage under supervision of GPs, assess the urgency of the patient's health problem on the phone and make a decision about the action to be taken: refer the patient to the emergency department or ambulance care, make an appointment for a GP consultation or a home visit, provide the patient with self-care advice by telephone or advise him to visit his own GP on the next working day.<sup>3</sup> In contrast with daytime general practice, patients are not seen by their own GP at the cooperative. GP cooperatives have increasingly more access to the patient records of the GP practices.

The increased number of patients contacting a GP cooperative is partly caused by patients who seek care for problems that have low urgency and can be considered 'inappropriate' from a medical and cost perspective. Much research has been carried out on inappropriate use of emergency care.<sup>7-9</sup> It is difficult to define inappropriate or unnecessary use, since patients and healthcare professionals may have different perspectives on the severity of a medical problem and urgency of seeking medical care.<sup>10-12</sup> Whereas professionals base their assessment on medical knowledge, clinical experience and physiological measures, patients also use 'socio-emotional' cues.<sup>13</sup> In addition, healthcare professionals themselves do not always agree on definition of 'inappropriate' use of medical care.<sup>14-16</sup>

### Help-seeking behaviour

People differ in their help-seeking behaviour, when experiencing a health problem. Some feel a high threshold for requesting medical care, whereas others feel none. Many factors can be related to citizens' help-seeking behaviour. Several theoretical models have been developed to identify healthcare use. A classic model is Andersen's health behaviour model of health service use.<sup>17-19</sup> This model was initially developed in the late 1960s to assist in understanding why

families use health services, to define and measure equitable access to healthcare, and to assist in developing policies to promote equitable access.<sup>19</sup> The model suggests that people's use of health services is a function of their predisposition to use services, factors which enable or impede use, and their need for care. The three major components of this model are predisposing factors, enabling factors and need factors. Predisposing factors are present before the occurrence of a health problem, for example demographic factors like age and gender. Enabling factors facilitate or obstruct healthcare use, for example income. Need factors refer to immediate reasons leading to service use, such as actual health status. In the years that followed, the model has been modified several times. The unit of analysis had shifted from family to the individual. In other updates the healthcare system and consumer satisfaction were added to the model.<sup>20</sup>

Two other widely used models which explain help-seeking behaviour are Mechanics' General Theory of Help-seeking, and the Health Belief Model. The General Theory of Help-seeking is based on 10 factors that emphasize individual differences in help-seeking behaviour.<sup>21</sup> The central theme in this theory is that illness behaviour is a culturally and socially learned response. A person responds to symptoms according to his or her definition of the situation. This definition may be influenced by the definitions of others, but is largely shaped by learning, socialization, and past experiences, as mediated by a person's social and cultural background.<sup>22</sup>

The Health Belief Model was developed in the 1950s to explain why medical screening programs for tuberculosis were not successful. The model attempts to explain and predict health behaviour by focussing on the attitudes and beliefs of individuals.<sup>23</sup> The model suggests that individuals' beliefs about the severity and susceptibility of a health problem, perceived benefits and barriers to action explain health behaviour. Also individuals' cues to action, such as media, friends, and family can influence health behaviour.

As far as we know none of these models have been used to examine help-seeking of out-of-hours primary care. In this thesis we will use Andersen's model to examine individuals' help-seeking behaviour of out-of hours (primary) care and map out the relevance of its components to out-of-hours help-seeking in the Dutch healthcare system.

### *Parents en migrants*

Previous research shows that particular groups of patients, such as parents of young children, lower educated individuals and migrants are more inclined to contact out-of-hours care than others.<sup>24-27</sup> A part of this thesis focussed on help-seeking behaviour of two of these groups, that is parents of young children and migrants.

Of all patient populations, parents with children between the age of 0 and 4 years most often contact a GP cooperative with non-urgent conditions.<sup>28,29</sup> Motives of parents to contact out-of-hours primary care are worry, fear and lack of control because of the progression of symptoms.<sup>30,31</sup> Parents also have the wish to get a diagnosis to increase their feeling of control over the condition. In many of these cases, it was not necessary to contact out-of-hours primary care from a medical perspective. Previous research showed that childhood fever accounts for a large part of the contacts at GP cooperatives.<sup>32</sup> A qualitative study showed that parents believe that there is a lack of reliable consistent information on self-management strategies for childhood fever before, during and after a consultation with a GP.<sup>33</sup> Further research on help-seeking behaviour of this group can give input for interventions to reduce inappropriate use of out-of-hours primary care, which again may contribute to the sustainability of the out-of-hours system.

Migrants' utilisation of healthcare services has often been investigated in western countries, showing a variety of results. Most studies found that migrants have a relatively high use of primary care and some types of specialist care, while preventive care and other healthcare are used less frequently.<sup>34-37</sup> Previous studies at the ED and out-of-hours primary care have shown that migrants more often use care for problems that are unnecessary from a medical perspective.<sup>38,39</sup> A possible explanation is that migrants differ in help-seeking behaviour and have other expectations of healthcare than native citizens, because they are familiar with a different healthcare system in their country of origin, have a poorer health status<sup>40-42</sup> and have lower health literacy skills.<sup>43,44</sup> Still a lot is unknown and since the migrant population is becoming larger, it is clearly relevant to understand the motives and expectations of this population.

### **Strategies to enhance appropriate use**

About half of all the contacts at the GP cooperatives, as well as one third of all clinic consultations are non-urgent (U4 or U5).<sup>5</sup> From a medical perspective, a proportion of these non-urgent health problems can wait until office hours or can be managed by the patient without further professional care. Likewise, at the ED there is also a high demand for care of patients with non-urgent problems.<sup>45</sup> Contacts of patients with unnecessary problems lead to inefficient use of resources.<sup>46,47</sup> In the Netherlands, the total costs for GP care of evening duties, night duties as well as weekend duties have increased in the period between 2010 and 2014 by an total amount of more than 62 million Euros (26%).<sup>48</sup> A previous study showed that 85% of GPs feel that patients receive too much care at the out-of-hours services.<sup>49</sup> For a lot of

GP cooperatives the high number of contacts leads to a high workload, which could in turn lead to lower quality of care and less motivation of GPs to be on duty.<sup>50</sup>

Little is known about strategies to reduce the use of GP cooperatives. However, there are a lot of studies about behaviour change in patients and (to a lesser extent) in health professionals. Michie and colleagues identified and categorised about 90 techniques that are used in behaviour change interventions.<sup>51</sup> Some of these techniques could be used to support patient decision making on healthcare use during out-of-hours and regulate demand for primary healthcare. Examples they found to be relevant for behavioural change in healthcare use are rewards and threats, feedback on behaviour, advice on arranging or providing social support. The main strategy to regulate patient flows in out-of-hours primary care is currently telephone triage, as every patient has to call first.<sup>52</sup> However, there may be additional approaches to the handling of patient requests at GP cooperatives.

## MAIN OBJECTIVE

### Research questions

The aim of this thesis is to provide insight into patients' help-seeking for contacting out-of-hours primary care, especially for non-urgent problems, and to identify strategies to enhance appropriate use of out-of-hours primary care. Two overarching research questions were derived from this aim:

1. Which factors influence patients' help-seeking for contacting out-of-hours primary care, especially for non-urgent problems?
2. What strategies can be used to enhance appropriate use of out-of-hours primary care?

### Outline of the thesis

We have performed three studies to answer the first research question. In **chapter 2** we examine factors influencing out-of-hours help-seeking behaviour of individuals for acute health problems. Guided by Andersen's behavioural model we examine which factors influence help-seeking behaviour for parents of young children and adults. We performed a survey in the Netherlands, Denmark and Switzerland. In the next two chapters we focussed on the motives of patients. In **chapter 3** we study the motives of patients with non-urgent problems for contacting out-of-hours primary care. We study whether these contacts were the result of patients' beliefs or of deficiencies in the healthcare system. In **chapter 4** we focus on migrants. We examine the motives and expectations of migrants for contacting out-of-hours primary care.

The second research question will be explored in two studies. In **chapter 5** we identify views of GPs to influence the use of the out-of-hours GP cooperative. In this study, we also examine what motives GPs think patients have to visit out-of-hours primary care for non-urgent problems. In **chapter 6** we explore the potential impact of demand management strategies on patient decision-making in both medically non-urgent and urgent scenarios during out-of-hours for children between the age of 0 and 4 years.

Finally in **chapter 7**, the general discussion, we present and discuss the main findings of this thesis in their broader theoretical and practical context. We also discuss the strengths and weaknesses of the studies, and we reflect on implications of our findings for practice and future research. **Table 2** gives an overview of the focus of the five studies regarding research question, population, main outcome measure and urgency.

**Table 2: Overview focus of studies**

	<b>Subject</b>	<b>Study population</b>	<b>Main outcome measure</b>	<b>Urgency</b>
	<b>Help-seeking (1)</b>			
1	Factors related to out-of-hours help-seeking	Citizens (parents and adults)	Help-seeking	All
2	Motives for contacting out-of-hours primary care	Patients	Motive for contacting GP cooperative	Non-urgent
3	Motives and expectations for contacting out-of-hours primary care	Migrant patients	Motive and expectation for contacting GP cooperative	All
	<b>Strategies (2)</b>			
4	Strategies to reduce use of out-of-hours primary care	GPs	Effectiveness and desirableness of strategies	Non-urgent
5	Impact strategies on patient decision-making	Citizens (parents)	Help-seeking	All

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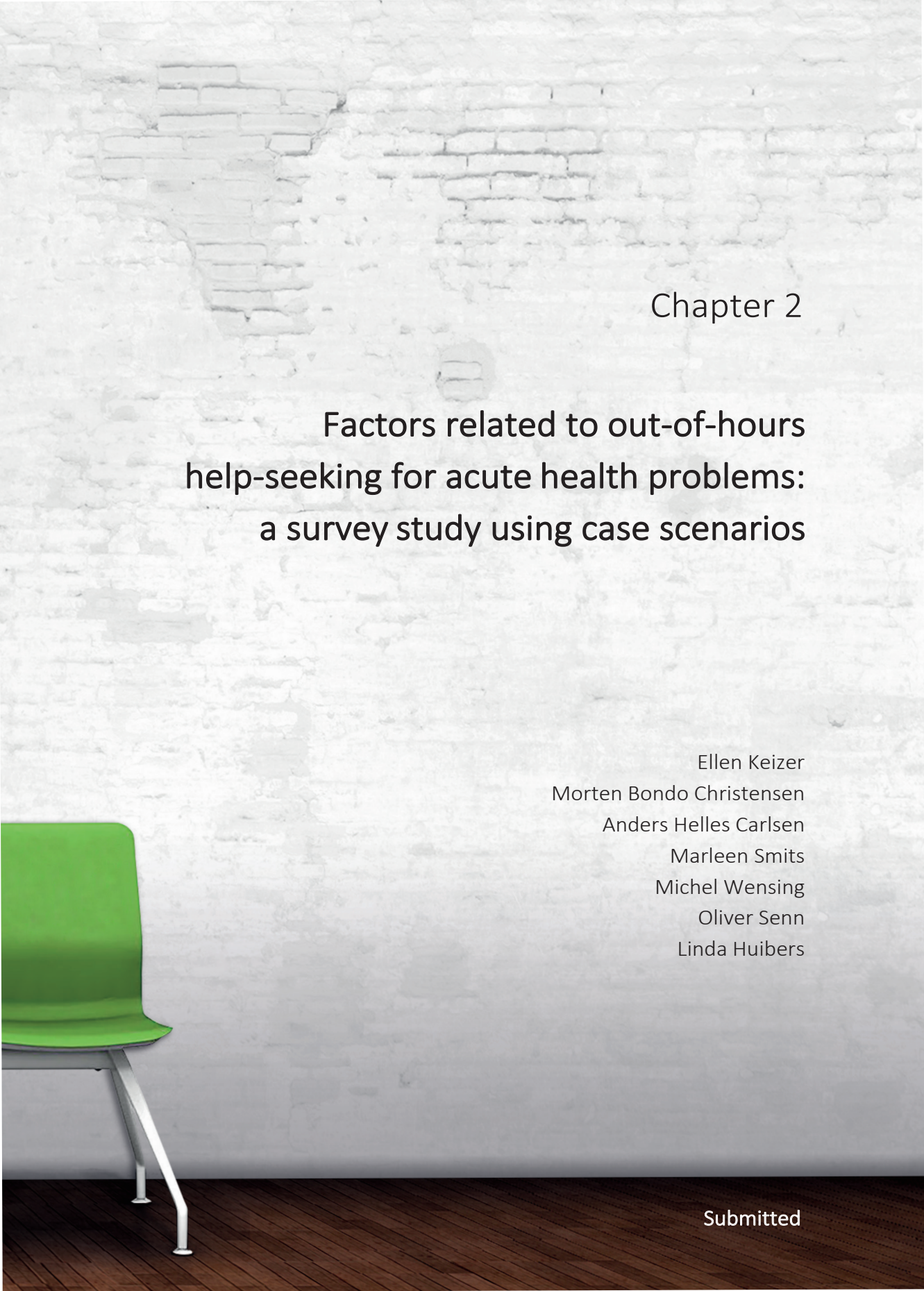
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## Chapter 2

# Factors related to out-of-hours help-seeking for acute health problems: a survey study using case scenarios

Ellen Keizer  
Morten Bondo Christensen  
Anders Helles Carlsen  
Marleen Smits  
Michel Wensing  
Oliver Senn  
Linda Huibers

Submitted

## ABSTRACT

**Background:** The number of patient contacts to the acute care services is increasing in many countries. We aimed to examine factors influencing the help-seeking behaviour of individuals for acute health problems during evenings, nights, and weekends.

**Methods:** We conducted a cross-sectional study based on data from Danish, Dutch, and Swiss parents of children (0-4 years) and adults (30-39 and 50-59 years). Seeking out-of-hours care was measured for six case scenarios. Determinants were categorised according to Andersen's Behavioural Model. Linear regression was applied to assess the influence of selected factors.

**Results:** A total of 1,015 parents and 2,942 adults participated. The explained variation ( $R^2$ ) of the models was 22.8% (parents) and 8.1% (adults). Parents with low education ( $\beta$  0.59, 95% CI 0.23-0.94), non-western background ( $\beta$  0.89, 95% CI 0.58-1.19), one child ( $\beta$  0.28, 95% CI 0.10-0.46), perceiving few barriers to use out-of-hours primary care ( $\beta$  0.61, 95% CI 0.45-0.77), and previous frequent contacts with out-of-hours care ( $\beta$  0.55, 95% CI 0.35-0.76) were more inclined to contact out-of-hours care, whereas female ( $\beta$  -0.21, 95% CI -0.40--0.01) and non-anxious parents ( $\beta$  -0.32, 95% CI -0.63--0.01) were less inclined. Adults who were older ( $\beta$  0.01, 95% CI 0.01-0.02), non-western ( $\beta$  0.34, 95% CI 0.09-0.59), unemployed ( $\beta$  0.21, 95% CI 0.07-0.35), perceiving few barriers to out-of-hours primary care ( $\beta$  0.42, 95% CI 0.31-0.53) and with previous contacts with a GP (few:  $\beta$  0.18, 95% CI 0.06-0.30; more:  $\beta$  0.26, 95% CI 0.09-0.42) and out-of-hours care (one:  $\beta$  0.24, 95% CI 0.10-0.38; more:  $\beta$  0.55, 95% CI 0.39-0.70) were more inclined to contact out-of-hours care, whereas adults with no or little social support ( $\beta$  -0.23, 95% CI -0.35--0.10) were less inclined. Danish parents were more inclined to contact out-of-hours care than Dutch parents ( $\beta$  -0.60, 95% CI -0.80--0.41), whereas Swiss adults were more inclined to contact out-of-hours care than Danish adults ( $\beta$  0.20, 95% CI 0.05-0.35).

**Conclusion:** We identified several factors that influenced the intended help-seeking in out-of-hours care. Educating specific patient groups in optimal use of out-of-hours care might facilitate more appropriate out-of-hours help-seeking behaviour.

## BACKGROUND

The number of patient contacts to the acute care services is increasing in many countries. Hospital emergency departments (EDs) are overcrowded, and the demand for services in out-of-hours primary care is high.<sup>1,2</sup> The increasing demands may lead to high workload for health professionals.<sup>3</sup> This can result in longer waiting times, subsequent delay in care, increased mortality, risk of safety incidents, and decreased patient satisfaction.<sup>2,4,5</sup> The excessive demand is partly caused by patients who seek care for problems that are non-urgent from a medical viewpoint.<sup>6,7</sup> At the ED and ambulance services, a substantial part of the patients could have been treated by a general practitioner (GP).<sup>7-10</sup> Additionally, many of the patients requesting out-of-hours primary care could have waited until their own GP's regular consultation hours or the situation could have been handled by self-care.<sup>11,12</sup>

Some individuals have a high threshold for requesting medical care when experiencing a health problem, whereas others contact for harmless conditions. Many factors are related to help-seeking behaviour, for example the patient characteristics and the organisation of the healthcare system.<sup>13</sup> Andersen's Behavioural Model of Health Services Use introduces three key elements that influence healthcare use: predisposing, enabling, and need factors.<sup>14,15</sup> Predisposing factors are conditions that are present before the occurrence of an illness, for example demographic factors like age and gender. Enabling factors facilitate or obstruct healthcare use, for example travel time. Need factors refer to immediate reasons leading to service use, such as someone's actual health status. This behavioural model has been used in many studies and in various settings, including the emergency care setting.<sup>16,17</sup> Yet, to our knowledge, this framework has not been used for studying help-seeking behaviour in the out-of-hours care setting. Furthermore, the organisation of healthcare systems, public expectations, and cultural background may influence the help-seeking behaviour, which may be related to differences in help-seeking between countries.

It would add insight if the impact of individual characteristics and differences between countries on help-seeking could be disentangled. Gaining insight into the help-seeking behaviour of individuals and identifying factors related to frequent use of out-of-hours care could give input to future interventions aiming for more medically appropriate use of out-of-hours care, which subsequently may contribute to reducing the workload for health professionals. The objective of our study was to examine factors influencing the intended help-seeking behaviour of individuals for acute health problems outside the regular clinic hours, i.e. during evenings, nights, and weekends.

## METHODS

### Design and population

We conducted a cross-sectional observational study from December 2015 to January 2016 among individuals in Denmark, the Netherlands, and Switzerland using paper-based case scenarios. This study formed part of a project of the European research network for out-of-hours primary health care (EurOOHnet).<sup>18</sup> We included individuals of three age groups: parents of children aged 0-4 years, adults aged 30-39 years, and adults aged 50-59 years. We chose these age groups because a previous study found differences in the use of out-of-hours care between Danish and Dutch young children and young adults.<sup>19</sup> We added the age group 50-59 years to include a broader range of age groups. Based on a calculation, we aimed to get 600 respondents per age group per country. Due to different methods of data collection and an expected difference in response rates, we selected a different number of individuals per country. For the selection of Danish individuals, we used the Danish Civil Registration System, which holds information on all Danish individuals, to select 1,200 individuals per age group. Individuals living in institutions and individuals with unknown address were excluded. For the Netherlands and Switzerland, a nationally representative consumer panel was used for each country. For the Netherlands, we used the consumer panel of TNS NIPO, a professional organisation for market research, to select 950 individuals per age group. This consumer panel consists of a representative group (over 200,000 members) of citizens ([www.tnsglobal.com](http://www.tnsglobal.com), 2017). For Switzerland, 6,093 representative members of two consumer panels (Respondi and Bilendi) were used to reach 600 respondents for the two adult age groups.

### Questionnaires

We developed two questionnaires for the study: one for parents of young children and one for adults. Both questionnaires consisted of predefined cases of situations with symptoms and diseases. and questions concerning factors related to help-seeking behaviour, based on the Andersen's Behavioural Model.<sup>14</sup> The cases for parents and adults differed, but all cases described situations that could create an acute need for medical help, and all cases involved frequently occurring health problems at different levels of urgency (**Appendix 1**).

### Development of case descriptions

To ensure that the presented cases were sufficiently content valid, the development process consisted of several steps. We selected cases based on cases from other studies<sup>20-22</sup> and added new cases to better reflect the broad range of frequent reasons for encounter at different

levels of urgency. Each case described a specific weekday and time. For cases involving children, we stated a specific age for the child as even small age differences in this group can change the help-seeking behaviour in the parents for the same illness. For cases involving adults, we did not state a specific age, but we gave an age range (30-39 years or 50-59 years) to ensure that the respondents were able to identify and see themselves in the described situation. The cases underwent several feedback cycles (both face-to-face and by email) with researchers and GPs from the three countries. Finally, we ended up with 20 cases on children and 32 cases on adults.

To get an overview of the urgency levels of the cases and to check the representativeness and clarity of formulations, an expert panel of 29 GPs reviewed the cases. These GPs had to meet the following inclusion criteria:  $\geq 2$  years GP,  $\geq 6$  out-of-hours shifts per year, coming from different regions within the countries, and fair knowledge of English. They assessed each case and recommended the appropriate (from a medical perspective) type of care needed in the situation using the following categories: 'Wait-and-see plus self-care', 'Own GP the next day', 'Out-of-hours primary care', 'Referral to the ED', 'Immediate contact with ambulance care (112 Emergency Medical Service, 144 for Switzerland, respectively)'.

Based on the input provided by the experts, we ranked the cases according to urgency level. Cases that were classified as 'unclear' according to the expert panel were excluded. In a research meeting, we selected 11 cases for children and 13 for adults that represented different levels of urgency. The included cases were translated from English into Danish using a backward-forward translation procedure and a consensus meeting.<sup>23</sup> The cases were sent to 150 Danish individuals per age group and tested for variations in help-seeking behaviour. We performed a Rasch analysis, selecting cases across the whole range, and cases without variation in answers were excluded. This resulted in a final selection of six cases for children and six for adults representing varying responses.

### **Outcome measure: intended help-seeking behaviour**

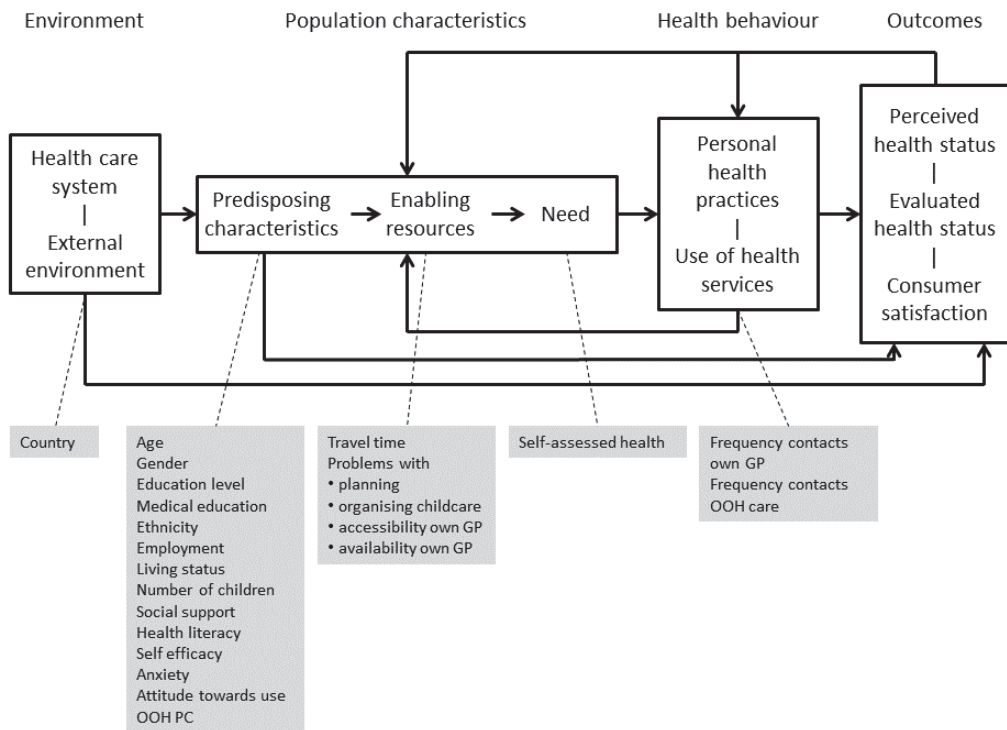
The central outcome measure was intended help-seeking behaviour outside office hours. For each case, we dichotomised the individual answers concerning expected behaviour: 0) 'not contacting out-of-hours care' ('Wait-and-see', 'Self-care', 'Ask my partner, a relative, or others for advice', 'Check a guidebook, the internet or an app', 'Contact my own GP on the next working day') and 1) 'contacting out-of-hours care' ('Contact out-of-hours primary care', 'Contact the ED', 'Contact 112/144 ambulance care'). Intended help-seeking behaviour was

estimated by counting the dichotomised scores of the six cases for each respondent; the total score was in the range 0-6.

### Theoretical framework and development of model

The study was guided by Andersen's Behavioural Model of Health Services Use,<sup>14,15</sup> which defines population characteristics (predisposing characteristics, enabling resources, and need), health behaviour, and outcomes that may affect the use of health services (**Figure 1**).

**Figure 1. Model of help-seeking behaviour, with included variables, based on Andersen's Behavioural Model<sup>14,15</sup>**



The following predisposing characteristics were included: age, gender, education level, medical education, ethnicity, work status, living status, number of children (for parents of children aged 0-4 years), social support, health literacy (navigating the system and finding information), self-efficacy, anxiety, and attitude towards use of out-of-hours primary care. The following enabling factors were included: travel time, problems with planning, organising

childcare (for children), and accessibility and availability of own GP. We included one need factor (self-assessed health of adult and child), two behavioural factors (frequency of contacts with own GP and frequency of contacts with out-of-hours care), and one environment factor (country). For some of the determinants, the following validated questionnaires were used: Generalized Anxiety Disorder scale (GAD-2),<sup>24</sup> General Self Efficacy Scale (GSE-10),<sup>25</sup> two scales of the Health Literacy Questionnaire (HLQ),<sup>26</sup> and the self-assessed health question from the 36-item Short Form Health Survey (SF-36) (self-assessed health).<sup>27</sup> Questions from previous studies were used; sometimes in adjusted form (education, employment,<sup>28</sup> social support<sup>29</sup>). We also added newly developed questions (medical education, living status, attitude towards use of out-of-hours primary care, perceived problems). For the Netherlands and Switzerland, standard questions of the internet panels were used (age, gender, education, employment). The data preparation of these factors is described in **Appendix 2**.

### Interviews and pilot study

The readability and feasibility of the original Danish version of the questionnaire was tested in two steps. First, cognitive interviews with eight patients from one GP practice were conducted to see if they understood the questions. Second, we performed a pilot study by sending the questionnaire to 50 Danish individuals per age group, including one reminder. The pilot study resulted in minor layout adjustments and showed good feasibility with a response rate of 38% for children, 28% for adults aged 30-39 years, and 50% for adults aged 50-59 years.

### Data collection

The Dutch and Swiss questionnaires were translated from the Danish source text by using two backward-forward procedures and a consensus meeting.<sup>23</sup> The Danish individuals received a paper questionnaire in January 2016, with the possibility to complete the questionnaire online, and a reminder three weeks later. The Dutch consumer panel members received an email with a link to the questionnaire in December 2015, and a reminder for age groups 0-4 and 30-39 years (the aimed response rate was met for age group 50-59 years). The data collection stopped after one week as the minimum of 600 respondents had been reached for all groups. The Swiss consumer panel members were invited by an email link in December 2015; all 6,093 individuals in the age groups 30-39 and 50-59 years were contacted. The data collection stopped after five days as the minimum of 600 respondents per age group had been reached. The Danish respondents participated in a lottery for three sets of two cinema tickets, whereas

the Dutch and Swiss consumer panel members each received a small financial compensation as a standard procedure.

### Statistical analysis

We checked the representativeness of our data. For Denmark, we compared respondents with non-respondents for age, gender, region, education level, ethnicity, living status, and employment as our sample was selected randomly from the entire population. For all countries, we compared respondents with the general population (age, gender, region, education level, ethnicity, living status, and employment) using 95% confidence intervals (CI). All analyses were done separately for children and adults (adults consisted of two age groups). Descriptive analyses were used to show the distribution of factors impacting help-seeking behaviour. The inclination to contact out-of-hours care was assessed using a multiple linear regression model including all factors. Estimates were presented using coefficients plots showing the 95% confidence intervals. For all analyses, we combined data from all participating countries (Denmark and the Netherlands for cases based on children; all three countries for cases based on adults). These analyses were also performed for each country separately to check the robustness of our data. Data were analysed using Stata 14 (StataCorp LP, College Station, TX, USA).

## RESULTS

### Population

In Denmark, we obtained data from 572 respondents for children (47.7%), 429 for adults aged 30-39 years (35.8%), and 652 for adults aged 50-59 years (54.3%); the overall response rate was 44.2% for adults. In the Netherlands, we ended the data collection after one week as the intended number of questionnaires had been reached: 621 respondents for children, 592 for adults aged 30-39 years, and 633 for adults aged 50-59 years. In Switzerland, the data collection also ended when the aim of approximately 600 respondents per age group had been reached: 589 respondents for adults aged 30-39 years and 595 for adults aged 50-59 years.

**Table 1** shows the characteristics of the study population. When checking for representativeness, we found that our respondents were slightly higher educated (except for the Swiss population aged 50-59 years), more often native, more often female, and less often living alone than the general population in the three countries (data not shown).

Table 1. Description of study population (%)

	Factors	Categories	Parents (Nmax=1,193) <sup>1</sup>	Adults (Nmax=3,490) <sup>2</sup>
PREDISPOSING	Age, mean(SD)		34.9 (5.1)	45.4 (10.2)
	Gender	Male	26.6	46.5
		Female	73.4	53.5
	Education level	Low	5.7	11.9
		Middle	31.7	51.9
		High	62.5	36.1
	Medical education	None	84.7	90.1
		Some/nurse/doc	15.3	9.9
	Ethnicity	Native	83.5	79.1
		Western migrant	8.7	15.8
		Non-western migrant	7.7	5.1
	Employment	Unemployed	23.5	20.1
		Employed	76.5	79.9
	Living status	Living alone	4.3	17.0
		Living with another adult	95.7	83.0
	Number of children	One	25.6	n.a.
		More than one	74.4	
	Social support	Lacking social support	15.4	25.7
		Receiving social support	84.6	74.3
	Health literacy – navigating the system	Low ability	4.0	5.0
		Middle ability	24.1	23.9
		High ability	58.3	55.3
		Highest ability	13.6	15.7
ENABLING	Travel time	< 15 minutes	49.4	47.1
		15-30 minutes	43.0	43.2
		> 30 minutes	7.7	9.7
	Problems – own work	No/few problems	75.1	83.6
		Some/many problems	24.9	16.4
	Organising childcare	Easy	44.4	n.a.
		Difficult	55.6	
	Accessibility own GP	No/few problems	66.3	79.1
		Some/many problems	33.7	20.9
	Availability own GP	No/few problems	77.4	84.8
		Some/many problems	22.6	15.2
NEED	Self-assessed health child/adult	Poor	2.6	13.7
		Good	97.4	86.3
BEHAVIOUR	Frequency contacts own GP	None/one contact	11.9	39.2
		Few contacts	47.9	43.3
		More contacts	40.2	17.5

Factors	Categories	Parents (Nmax=1,193) <sup>1</sup>	Adults (Nmax=3,490) <sup>2</sup>
Frequency contacts out-of-hours care	None	27.3	66.8
	One contact	24.5	17.3
	More contacts	48.2	15.8

*N.a. is not applicable.*

<sup>1</sup>Percentage of missing values ranged from 0% (age, gender) to 5.3% (frequency of out-of-hours care)

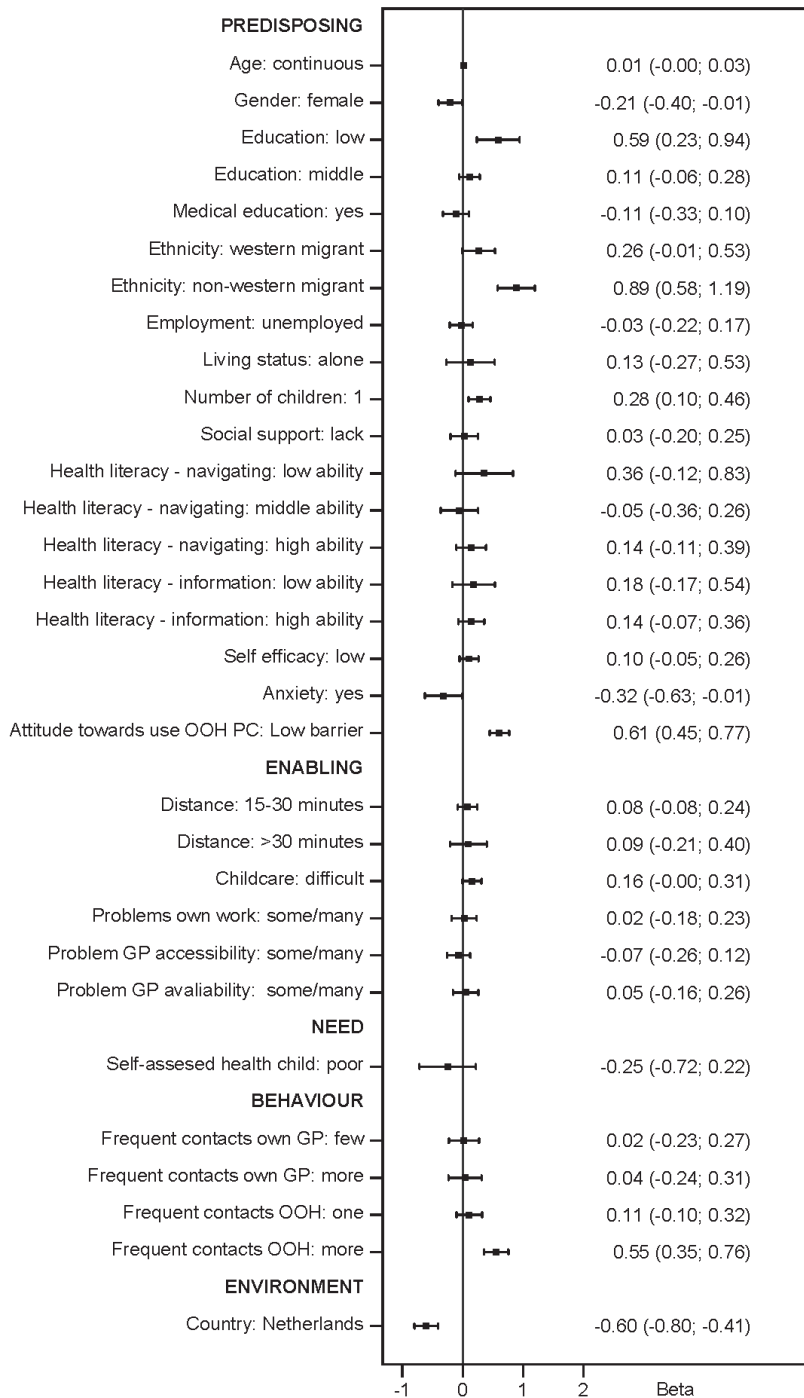
<sup>2</sup>Percentage of missing values ranged from 0% (age, gender) to 5.1% (travel time)

\* Compared to the general population in the three countries; our respondents were slightly higher educated (except the Swiss in the age group 50-59 years), more often native, more often female, and less often living alone.

### Factors influencing intended help-seeking behaviour

In **Figure 2** we present the factors related to intended help-seeking behaviour for children (n=1,015). Our model explained 22.8% of the parents' help-seeking behaviour ( $r^2=0.225$ ). We found that women were less inclined to contact out-of-hours care for their child than men; women had 0.21 fewer contacts with out-of-hours care out of six cases ( $\beta$  -0.21, 95% CI -0.40--0.01). Low educated parents had higher probability of seeking help than high educated parents ( $\beta$  0.59, 95% CI 0.23-0.94). Furthermore, parents with a non-western background were more inclined to seek help for their child than parents with natives background ( $\beta$  0.89, 95% CI 0.58-1.19). Parents with one child also tended to contact out-of-hours care more frequently than parents with more than one child ( $\beta$  0.28, 95% CI 0.10-0.46). Parents with anxiety were less inclined to contact out-of-hours care than parents without anxiety ( $\beta$  -0.32, 95% CI -0.63--0.01). Parents perceiving few barriers to using out-of-hours primary care were more inclined to contact out-of-hours care for their children than parents perceiving barriers to use out-of-hours primary care ( $\beta$  0.61, 95% CI 0.45-0.77). Additionally, in comparison with parents who had not used out-of-hours care during the last year, parents who had used out-of-hours care frequently were more inclined to contact out-of-hours care ( $\beta$  0.55, 95% CI 0.35-0.76). Finally, we found a difference between the Danish and the Dutch parents; Dutch parents generally chose to contact out-of-hours care less often than Danish parents ( $\beta$  -0.60, 95% CI -0.80--0.41).

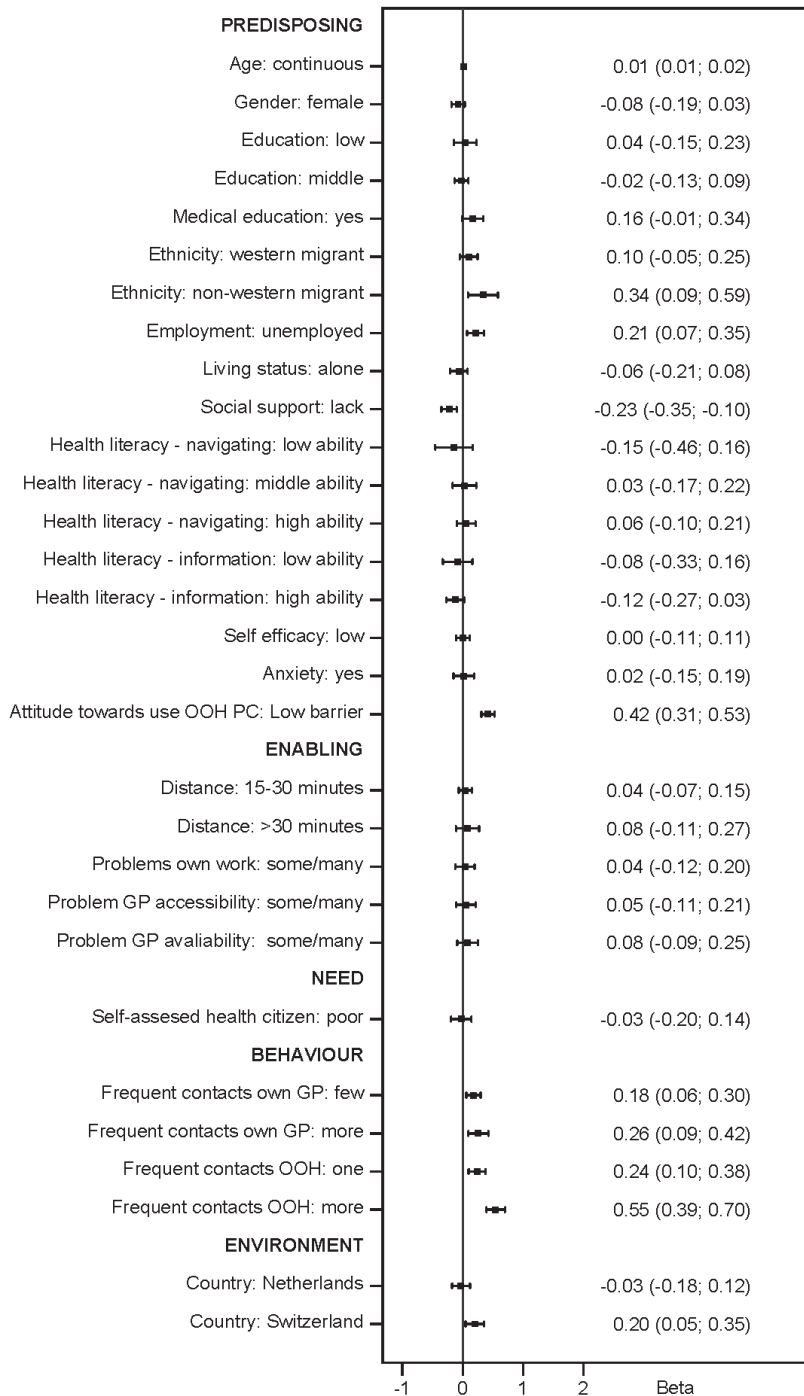
Figure 2. Help-seeking of parents (beta and 95% confidence level)



**Figure 3** shows the results for factors related to intended help-seeking behaviour for adults (n=2,942). The model explained 8.1% of the intended help-seeking behaviour among adults ( $r^2=0.081$ ). We found that the probability for contacting out-of-hours care increased with an individual's age ( $\beta$  0.01, 95% CI 0.01-0.02). Non-western migrants were more inclined to contact out-of-hours care than native individuals ( $\beta$  0.34, 95% CI 0.09-0.59), and unemployed individuals had a higher probability of seeking help than employed individuals ( $\beta$  0.21, 95% CI 0.07-0.35). Individuals with no or little social support were less likely to contact out-of-hours care than individuals with social support ( $\beta$  -0.23, 95% CI -0.35--0.10). We also found that individuals who perceived few barriers to using out-of-hours primary care would more often contact out-of-hours care than individuals who perceived barriers ( $\beta$  0.42, 95% CI 0.31-0.53). Individuals who had few or more contacts with their GP were more inclined to contact out-of-hours care than individuals who had no contacts with their GP (few:  $\beta$  0.18, 95% CI 0.06-0.30; more:  $\beta$  0.26, 95% CI 0.09-0.42). Additionally, individuals who had frequently contacted out-of-hours care would more often contact out-of-hours care than those with infrequent contacts (one:  $\beta$  0.24, 95% CI 0.10-0.38; more:  $\beta$  0.55, 95% CI 0.39-0.70). Finally, we found that the Swiss were more likely to contact out-of-hours care than the Danish population ( $\beta$  0.20, 95% CI 0.05-0.35).

Stratified analyses per country showed the same significant associations for most of the help-seeking factors (data not shown). Some associations were no longer present (most likely due to lack of power), but we still found trends and associations in the same direction as for the overall data.

Figure 3. Help-seeking of adults (beta and 95% confidence level)



## DISCUSSION

### Main findings

For parents, the following predisposing factors were related to having more inclination to contact out-of-hours care for their children: male, low education, non-western migrant, having one child, being non-anxious, and perceiving few barriers to using out-of-hours care. For adults, individuals characterised by older age, being a non-western migrant, unemployment, having social support, and perceiving few barriers to using out-of-hours care were more inclined to contact out-of-hours care. The behavioural factors previous contact with GP care (for adults) and with out-of-hours care (adults and parents) positively influenced the inclination to seek help, whereas enabling and need factors were not associated with help-seeking behaviour. The environment, which was expressed by the factor 'country', seemed to influence the individuals' help-seeking behaviour: Danish parents were more inclined to contact out-of-hours care for their children than Dutch parents, and Swiss adults were more inclined to contact out-of-hours care than Danish adults. Our model targeting parents explained 22.8% of their intended help-seeking behaviour, which is much better than the model about adults, which only explained 8.1% of their intended help-seeking behaviour.

### Interpretation of results and comparison with literature

We found that older individuals, low educated individuals, and non-western migrants were more inclined to contact out-of-hours care, which has also been found in other studies.<sup>13,30</sup> Additionally, those studies showed that women were more inclined to contact healthcare, whereas we found that women were less inclined to contact out-of-hours care for their child. Men and women might react differently when it comes to their child than when a health issue concerns themselves. This may be related to the traditional caretaker role of women, which could make men less certain about childhood diseases and thus more likely to contact medical experts.

In line with our findings, a previous study found that parents with one child were more inclined to seek help than parents with more children.<sup>31</sup> These parents may be more easily worried because they have limited experience with common childhood diseases, such as fever, and thus may seek advice sooner. We did not find effects of need and enabling factors, such as health status, distance to healthcare services, and access to daytime general practice, although other studies have reported some influence.<sup>13,32-34</sup> One explanation could be the extensive model that we used; the effect of some of the included factors, such as access to daytime general practice, could possibly be influenced by other factors, such as ethnicity and

education. We found that adults with social support were more inclined to contact out-of-hours care. An explanation for this could be that people from the private network may encourage contact with a doctor in an acute situation or in case of doubt.

Our analyses showed that non-anxious parents were more inclined to contact out-of-hours care. We expected to find the opposite because we hypothesised that anxious parents would get worried more quickly and thus would be more likely to contact out-of-hours care frequently. It is difficult to explain this result, but their anxiety probably makes it difficult to contact healthcare, or they may feel uncomfortable with contacting unknown doctors.

Although we have used a comprehensive model allowing for many factors, other factors could also have an important role as our models explained only 22.8% of the intended help-seeking behaviour concerning children and 8.2% in adults. For example, other studies have shown some influence of chronic and mental diseases and some impact on the quality of the communication with the GP.<sup>13, 34,35</sup> Other unknown factors could also be relevant, and some factors may only affect subgroups. The most obvious factors that could be related to help-seeking behaviour are probably need factors, such as the type and characteristics of the health problem.

A previous study found that Danes more often contacted out-of-hours primary care than the Dutch,<sup>19</sup> which is in line with our findings for children. Another study about the propensity to seek healthcare in 34 countries found that Denmark has the highest scores on minor complaints.<sup>13</sup> The influence of the factor 'country' is difficult to interpret; both differences related to culture and to the healthcare system could be relevant. Additionally, other factors that were not included in our model could also play a role. One of the explanations for the difference between Danish and Dutch parents could be the direct access to a GP, who answers the telephone in Danish out-of-hours primary care (whereas a nurse performs the triage in the Dutch out-of-hours setting).

### Strengths and limitations

A strength of this study is that we studied the intended help-seeking behaviour of individuals, including those who never consulted a GP or an ED. We included a relevant range of factors, which were adjusted for each other. We also presented a relatively complete overview of potential relevant factors in help-seeking behaviour, and the theoretical framework was based on Andersen's acknowledged Behavioural Model. The case descriptions were systematically developed and pilot tested.

One of the limitations of our study is that we used paper-based case scenarios to measure help-seeking behaviour. Asking about behaviour in hypothetical situations may not represent actual behaviour and could include social desirability bias. We cannot rule out the possibility that individuals make other decisions in real life. Nevertheless, help-seeking behaviour is mainly determined by behavioural intentions.<sup>36</sup> Help-seeking behaviour was measured by combining the decisions on six cases, and the selection of cases could have influenced the results found. Yet, we believe that this would have mainly affected our effect size rather than the direction of findings. It is also possible that factors related to help-seeking differ per case. A previous study has shown that the association between gender and help-seeking behaviour depends on the symptom studied.<sup>37</sup> Furthermore, although our response rates were acceptable for this type of study, we cannot rule out selection bias. We found that our respondents did not completely represent the general population. However, as our study focused on factors related to help-seeking, we do not think that this influenced our results.

### **Clinical implications and future research**

We found several factors that were related to a higher use of out-of-hours care, and some of these could be included in interventions aiming to ensure more appropriate use of out-of-hours care. For example, attitude towards the use of out-of-hours primary care seems to be an important factor for help-seeking. It may be possible to educate individuals about the purpose of out-of-hours primary care, both during the contact with an out-of-hours primary care service or during the contact with the own GP, or having a nationwide patient education campaign. Yet, the effectivity of patient education is debatable.<sup>38</sup> As ethnicity was found to be a relevant factor, one could question whether migrants have sufficient information about the national healthcare system, so these individuals could also be considered in a focused campaign. Furthermore, parents with one child were found to have higher use, and other information sources targeting this group (apps or help lines, for example) could be investigated.

We found that the factor 'country' influenced the help-seeking of individuals, but we could only speculate about the explanations for these differences. Future research should focus on the effect of healthcare systems and the culture surrounding help-seeking. Furthermore, future research, including intervention studies, could help identify the most important and potentially modifiable factors. This would be important as our model only explained small parts of the help-seeking behaviour. In general the question is whether it is possible to change the help-seeking behaviour in the modern consumer societies, where most individuals expect 24/7

access to a wide range of services. Perhaps one should also focus on alternative ways of providing out-of-hours care, such as evening consultations in general practice.

## Conclusion

Predisposing factors (like age, gender, ethnicity, education, employment, number of children, anxiety, social support, and attitude towards use of out-of-hours care) and behavioural factors (previous contact with GP and out-of-hours care) are all factors that influence the intended help-seeking in out-of-hours care. Beside these factors, the resident country of the contacting individual also seems to influence the intended help-seeking behaviour. Some information could be used to discuss tailor-made interventions, but more research is needed to examine the underlying explanations for the identified differences.

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## APPENDIX 1. CASES

<b>Box 1. Cases for children</b>
<b>Case 1 'Abdominal pain'</b>
<p><i>Time:</i> Saturday at 3 PM.</p> <p><i>Situation:</i> Your 4-year-old child has had abdominal pain for two days, and the pain is increasing in severity. He has a fever (39.6°C). He has vomited twice today and has not eaten anything for the entire day. He will not drink much. He has a little bit of diarrhea. You cannot comfort him by reading a book, and he does not want to play by himself.</p>
<b>Case 2 'Red eyes'</b>
<p><i>Time:</i> Sunday evening at 4 PM.</p> <p><i>Situation:</i> Your 3-year-old child has a cold and has had red eyes with discharge for two days. He is also sniffing. The eye discharge is yellow, and the eyelids stick together slightly. He has no problems with the vision and no wounds or other skin rashes. He is watching television.</p>
<b>Case 3 'Fever'</b>
<p><i>Time:</i> Saturday at 3 PM.</p> <p><i>Situation:</i> Your 15-month-old child has woken after his nap with a temperature of 39.8°C. He already seemed listless before his nap today. He has not vomited, has no diarrhoea and no skin rash. He wants to sit with you and watch television. He does not want to eat anything, but drinks small amounts of cold water.</p>
<b>Case 4 'Rash'</b>
<p><i>Time:</i> Saturday at 3 PM.</p> <p><i>Situation:</i> Your 2-year-old child wakes up after his nap with red rash across arms, legs, chest and face. The rash is itching. He is alert, is playing as usual and has no other complaints and no fever.</p>
<b>Case 5 'Relapse fever'</b>
<p><i>Time:</i> Thursday at 7 PM.</p> <p><i>Situation:</i> Your 8-month-old child has a fever. Last week, he had a common cold with a fever. He was also coughing. He seemed to recover, but now the fever has returned (temperature: 39.1°C). He does not drink a lot, and he is still coughing. Your child wants to sit with you all the time, but you cannot comfort him.</p>
<b>Case 6 'Chicken pox'</b>
<p><i>Time:</i> Sunday at 5 PM.</p> <p><i>Situation:</i> For one day, your 2-year-old child has had red skin and fluid-filled blisters, mostly on the chest and belly. He is a bit warm (temperature: 38.1°C), complains of a sore throat and generally does not seem fit. He drinks and eats as usual and is as alert as usual.</p>

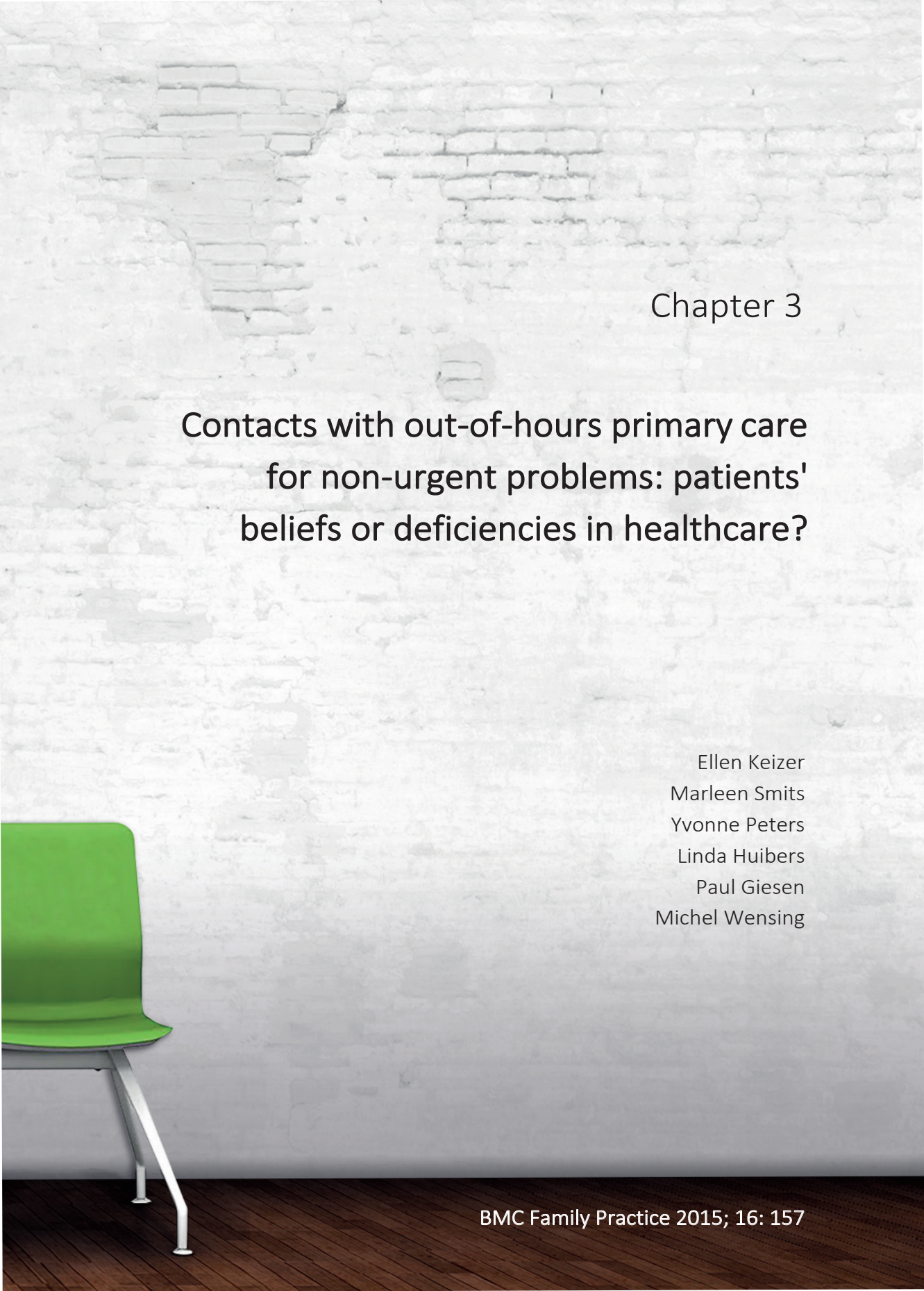
<b>Box 2. Cases for adults</b>
<b>Case 1 'Painful leg'</b>
<p><i>Time:</i> Sunday at 3 PM.</p> <p><i>Situation:</i> When you woke up this morning, your left leg was swollen and painful. The leg has a warm, red and painful area with a 10 cm diameter. You do not feel well. You are not sure whether you have a fever. You did not hit your leg.</p>
<b>Case 2 'Acute stomach pain'</b>
<p><i>Time:</i> Monday at 8 PM.</p> <p><i>Situation:</i> You have been suffering from a severe stomach ache that started suddenly two hours ago; something you have never had before. The pain seems to be localised in your upper stomach, radiating towards your shoulder blades. You have an urge to move around a lot, and you feel nauseous, but you do not vomit. You have had normal defecation patterns all day.</p>
<b>Case 3 'Acute back pain'</b>
<p><i>Time:</i> Wednesday at 6 PM.</p> <p><i>Situation:</i> This morning you suddenly got a severe back pain when lifting a bag with groceries. The pain is continuously present in your lower back. The pain does radiate to your left buttocks, and it limits your movements. You have taken paracetamol (Panadol), but this does not relieve the pain.</p>
<b>Case 4 'Sore throat'</b>
<p><i>Time:</i> Thursday at 7 PM.</p> <p><i>Situation:</i> You have been suffering from a severe sore throat for two days. You are also coughing slightly and feel feverish. You can take liquids, but swallowing is painful. You have to attend a wedding of a relative in two days.</p>
<b>Case 5 'Wounded foot'</b>
<p><i>Time:</i> Wednesday at 7 PM.</p> <p><i>Situation:</i> You accidentally stepped on a piece of glass with your left foot 30 minutes ago. The piece of glass seems to have come out. The bleeding seems to have lessened, but you have quite some pain. The wound is about 3 cm long and is open 1-2 mm. Your tetanus vaccination is up to date.</p>
<b>Case 6 'Ankle distortion'</b>
<p><i>Time:</i> Saturday at 4 PM.</p> <p><i>Situation:</i> Your left foot was twisted yesterday when you were walking in the forest. Your left ankle was directly painful and swollen. Initially, you were able to walk on the injured foot, but now you are unable to even rest on it. Your left ankle is quite painful and seems swollen compared to the right one.</p>

## APPENDIX 2. CATEGORISATION OF INFLUENTIAL FACTORS

Factors	Final categories	Categorisation
<b>PREDISPOSING</b>		
<b>Age</b>	Continuous	
<b>Gender</b>	Male ( <i>ref</i> ) Female	'Male' 'Female'
<b>Education level</b>	Low Middle High ( <i>ref</i> )	≤ 10 years >10 & ≤ 15 years > 15 years <i>This categorisation was made following the ISCED guidelines<sup>39</sup></i>
<b>Medical education</b>	None ( <i>ref</i> ) Some/nurse/doc	'None' 'Doctor', 'Nurse', 'Other'
<b>Ethnicity</b>	Native ( <i>ref</i> ) Western migrant  Non-western migrant	Both parents born in the study country At least one parent born in a European country (except Turkey), North America, Oceania, Indonesia, or Japan* At least one parent born in another country* <i>*If the parents were born in different country groups outside the study countries, mother's country of birth was used to determine ethnicity</i>
<b>Employment</b>	Unemployed  Employed ( <i>ref</i> )	'Disabled', 'Unemployed, seeking work, social security', 'Pre-pension (not because of health problems)', 'Pension', 'Student', 'Care for family and household (without social security)' 'Employed', 'Self-employed'
<b>Living status</b>	Living alone Living with another adult ( <i>ref</i> )	'No' 'Yes, with friend(s) or roommate(s)', 'Yes, with adult child(ren)', 'Yes, with wife/husband, partner', 'Yes, with parent(s)', 'Yes, in nursing home', 'Yes, other'
<b>Number of children<sup>1</sup></b>	One  More than one ( <i>ref</i> )	1 ≥ 1
<b>Social support</b>	Lacking social support Social support ( <i>ref</i> )	'No, never or almost never', 'Yes, sometimes' 'Yes, often', 'Yes, mostly'
<b>Health literacy – navigating the system</b>	Low ability Middle ability High ability Highest ability ( <i>ref</i> )	Mean of 6 items < 2.5 Mean of 6 items ≥ 2.5 & < 3.5 Mean of 6 items ≥ 3.5 & < 4.5 Mean of 6 items ≥ 4.5 & ≤ 5.0 <i>6 items, with 5-point scale. At least three valid answers were needed</i>
<b>Health literacy – sufficient information</b>	Low ability High ability Highest ability ( <i>ref</i> )	Mean of 4 items < 2.5 Mean of 4 items of scale ≥ 2.5 & < 3.5 Mean of 4 items of scale ≥ 3.5 & ≤ 4 <i>4 items, with 5-point scale. At least two valid answers were needed</i>
<b>Self-efficacy</b>	Low High ( <i>ref</i> )	Sum score < mean sum score GSE-10 Sum score > mean sum score GSE-10 <i>10 items, with 4-point scale. At least 7 valid answers were needed</i>
<b>Anxiety</b>	No anxiety ( <i>ref</i> ) Anxiety	Sum score 2 items ≥ 3 Sum score 2 items < 3 <i>Two valid answers</i>

Factors	Final categories	Categorisation
<b>Attitude towards use out-of-hours primary care</b>	Low barrier	No missing value and sum score $\geq 6$ , one missing value and sum score $\geq 5$
	High barrier ( <i>ref</i> )	No missing value and sum score $\leq 5$ , one missing value and sum score $\leq 4$ <i>4 statements, with 5-point scale; per item score reflected range from feeling barrier to having right. Scores per item were dichotomised and summed; score range: 4-8. At least 3 valid answers were needed</i>
<b>ENABLING</b>		
<b>Travel time</b>	<15 minutes ( <i>ref</i> )	'Less than 15 minutes'
	15-30 minutes	'15 to 30 minutes'
	>30 minutes	'30 to 60 minutes', 'More than 60 minutes'
<b>Problems – own work or private appointments</b>	No/few problems ( <i>ref</i> )	'No, no problems', 'Yes, few problems'
	Some/many problems	'Yes, some problems', 'Yes, many problems'
<b>Problems – organising childcare<sup>1</sup></b>	Easy ( <i>ref</i> )	'Very easily', 'Easily'
	Difficult	'With difficult', 'Very great difficult'
<b>Problems – accessibility own GP</b>	No/few problems ( <i>ref</i> )	'No, no problems', 'Yes, few problems'
	Some/many problems	'Yes, some problems', 'Yes, many problems'
<b>Problems – availability own GP</b>	No/few problems ( <i>ref</i> )	'No, no problems', 'Yes, few problems'
	Some/many problems	'Yes, some problems', 'Yes, many problems'
<b>NEED</b>		
<b>Self-assessed health child/adult</b>	Poor	'Very bad', 'Bad'
	Good ( <i>ref</i> )	'Fair', 'Good', 'Very good'
<b>BEHAVIOUR</b>		
<b>Frequency of contacts to own GP</b>	None/one contact ( <i>ref</i> )	0-1 contacts
	Few contacts	2-4 contacts
	More contacts	$\geq 5$ contacts
<b>Frequency of contacts to out-of-hours care</b>	None ( <i>ref</i> )	Sum score on 3 variables (contact frequency out-of-hours primary care, ED and 112) = 0
	One contact	Sum score on 3 variables (contact frequency out-of-hours primary care, ED and 112) = 1





## Chapter 3

# Contacts with out-of-hours primary care for non-urgent problems: patients' beliefs or deficiencies in healthcare?

Ellen Keizer  
Marleen Smits  
Yvonne Peters  
Linda Huibers  
Paul Giesen  
Michel Wensing

## ABSTRACT

**Background:** In the Netherlands, about half of the patient contacts with a general practitioner (GP) cooperative are non-urgent from a medical perspective. A part of these problems can wait until office hours or can be managed by the patient himself without further professional care. However, from the patient's perspective, there may be a need to contact a physician immediately. Our objective was to determine whether contacts with out-of-hours primary care made by patients with non-urgent problems are the result of patients' beliefs or of deficiencies in the healthcare system.

**Methods:** We performed a survey among 2000 patients with non-urgent health problems in four GP cooperatives in the Netherlands. Two GPs independently judged the medical necessity of the contacts of all patients in this study. We examined characteristics, views and motives of patients with medically necessary contacts and those without medically necessary contacts. Descriptive statistics were used to describe the characteristics, views and reasons of the patients with medically unnecessary contacts and medically necessary contacts. Differences between these groups were tested with chi-square tests.

**Results:** The response rate was 32.3% (n=646). Of the non-urgent contacts 30.4% were judged as medically necessary (95% CI 27.0-34.2). Compared to patients with non-urgent but medically necessary contacts, patients with medically unnecessary contacts were younger and were more often frequent attenders. They had longer-existing problems, lower self-assessed urgency, and more often believed GP cooperatives are intended for all help requests. Worry was the most frequently mentioned motive for contacting a GP cooperative for patients with a medically unnecessary contact (45.3%) and a perceived need to see a GP for patients with a medically necessary contact (44.2%). Perceived availability (5.8%) and accessibility (8.3%) of a patient's own GP played a role for some patients.

**Conclusion:** Motives for contacting a GP cooperative are mostly patient-related, but also deficiencies in access to general practice may partly explain medically unnecessary use. Efforts to change the use of GP cooperatives should focus on education of subgroups with an increased likelihood of contact for medically unnecessary problems. Improvement of access to daytime primary care may also decrease use of the GP cooperative.

## BACKGROUND

In several European countries out-of-hours primary care is organised in large-scale general practitioner (GP) cooperatives.<sup>1-4</sup> GP cooperatives have been set up for urgent help requests that cannot wait until the regular consultation hours of the patient's own GP. Telephone triage is used to assess the urgency of the patient's health problem on the phone and to come to a decision about the action to be taken: refer the patient to the emergency department or ambulance care, make an appointment for a GP consultation or a home visit, provide the patient with self-care advice by telephone or advise him to visit his own GP on the next working day.<sup>2</sup>

In the Netherlands, since the establishment of GP cooperatives in the year 2000, the number of patient contacts at GP cooperatives has increased up to 4 million contacts in 2013 (250 contacts per 1000 inhabitants per year).<sup>5</sup> This increase was partly caused by patients who seek care for problems that are non-urgent from a medical perspective, leading to a disruption of the continuity of care, inefficient use of resources and avoidable high spending.<sup>6-8</sup> Moreover, the higher demand contributes to an increase of healthcare professionals' workload and dissatisfaction.<sup>9</sup> From a medical perspective, part of the non-urgent health problems can wait until office hours or can be managed by the patient himself without further professional care. In earlier studies, GPs indicated that a substantial number of patient contacts in both primary out-of-hours care and hospital care are unnecessary and can be avoided.<sup>10,11</sup> However, from the patient's perspective, some patients perceive the need to contact a physician immediately. There are several possible explanations for the high use of out-of-hours care for non-urgent problems. For instance, society's experiences with expanded opening hours of other services may have led to increased expectations of healthcare availability. Also, patients want to avoid risk and perhaps expect immediate solutions for their health problems, without having to wait until the consultation hours of their own GP.<sup>12,13</sup> Furthermore, families have become smaller<sup>14</sup> which may have resulted in parents who are less experienced with child health problems. In addition, lack of access during daytime and other deficiencies in the (primary) healthcare system may also be a motive for contacting a GP cooperative.

There have been several studies on the non-urgent and inappropriate use of the hospital emergency department (ED),<sup>15-20</sup> yet we know of only one study on the use of primary out-of-hours care.<sup>21</sup> Previous research has shown that many healthcare professionals believe health system deficiencies are an important cause of non-urgent ED use.<sup>22</sup> This is also indicated by patients themselves<sup>20,23-25</sup> as well as policy makers. Consequently, motives for seeking ED care include lack of access to GPs (long waiting times for appointments) and dissatisfaction with the GP. These motives could also be relevant for patients visiting a GP cooperative.

Our aim was to study whether contacts with out-of-hours primary care of patients with non-urgent problems are the result of patients' beliefs or of deficiencies in the healthcare system. We examined similarities and differences in the characteristics, views and motives of patients with medically necessary contacts and those without.

## METHODS

### Design, setting, and study population

We performed a survey study in a stratified sample of 2000 patients who contacted the GP cooperative for a non-urgent health problem. The study was executed in a convenience sample of four GP cooperatives spread across the Netherlands. Two GP cooperatives took the initiative for a study on this subject themselves and the other two were selected by the researches to obtain a good variation in size and location of the participating GP cooperatives. Key features of GP cooperatives in the Netherlands have been listed in **Table 1**. Patients who received a triage urgency category 4 or 5 (on a scale of 0 = high to 5 = low), which was non-urgent, were included in this study. We asked the parents of patients aged under 12 to fill in the questionnaire. The following exclusion criteria were used: dying or deceased patients; patients who contacted the GP cooperative for administrative reasons or for confidential problems; patients who lived outside the Netherlands; telephone stalkers and patients who declared not to be willing to participate in our research. At one GP cooperative some high urgency patients were mistakenly included, but these were excluded based on the judgement of a GP (n=21).

At each GP cooperative 400 patients received a postal questionnaire within ten days after their contact during a four-week period between April 2009 and October 2012. Stratification was based on the type of contact: 200 questionnaires were sent to patients who had only had a telephone contact and 200 to patients who had a GP consultation at the GP cooperative. Because of a lagging response at one GP cooperative, a second group of 400 patients of that GP cooperative received the questionnaire.

**Table 1. Features of general practitioner (GP) cooperatives in the Netherlands<sup>2,5,33</sup>**

Theme	Feature
<b>General</b>	<ul style="list-style-type: none"> <li>• Out-of-hours primary care has been provided by large-scale general practitioner (GP) cooperatives since the year 2000</li> <li>• Participation of 50–250 GPs per cooperative with a mean of 4 hours on call per week</li> <li>• About 120 GP cooperatives in the Netherlands</li> <li>• Population of 100,000 to 500,000 patients with an average care consumption of 250/1000 inhabitants per year</li> <li>• Out-of-hours defined as daily from 5 p.m. to 8 a.m. holidays and the entire weekend</li> <li>• Patients are classified in urgency categories from high to low urgency (U1:1.5% U2:11.1% U3:38.0% U4:21.7% U5:26.3%)</li> <li>• Per shift GPs have different roles: supervising telephone triage, doing centre consultations or home visits</li> </ul>
<b>Location</b>	<ul style="list-style-type: none"> <li>• GP cooperative usually situated in or near a hospital</li> <li>• Distance of patients to GP cooperative is 30 km at most</li> </ul>
<b>Accessibility</b>	<ul style="list-style-type: none"> <li>• Access via a single regional telephone number, meaning the first contact mostly is with a triage nurse (only 5–10% walk in without a call in advance)</li> <li>• Telephone triage by nurses supervised by GPs: contacts are divided into telephone advice (40%), centre consult (50%), or GP home visit (10%)</li> </ul>
<b>Facilities</b>	<ul style="list-style-type: none"> <li>• Home visits are supported by trained drivers in identifiable fully equipped GP cars (e.g. oxygen, intra venous drip equipment, automated external defibrillator, medication for acute treatment)</li> <li>• Information and communication technology (ICT) support including electronic patient files, online connection to the GP car, and sometimes connection with the electronic medical record in the GP daily practice</li> </ul>

### *Questionnaire*

The questionnaire was partly based on an existing questionnaire measuring patient satisfaction with out-of-hours care.<sup>26</sup> The reliability of this questionnaire was high and content and construct validity appeared to be ensured. Our questionnaire included questions about patient characteristics, views and motives.

### *Characteristics of patients*

We asked the patients questions about background characteristics, duration of the problem, frequency of contact with a GP cooperative in the past year and number of contacts with their own GP for the same problem.

### *Views of patients*

The questionnaire included questions about the patients' expectations, assessment of urgency, perceptions regarding their own health, attitudes towards physical symptoms and agreement with statements on the use of the GP cooperative.

We used a shortened version of a validated questionnaire<sup>27</sup> for perceptions regarding their own health and attitudes towards physical symptoms. To measure perceptions regarding their

own health, we used a seven-item scale which included items like 'My health is worse than that of the majority of people' and 'To a variety of physical symptoms, I notice something is wrong with my health'. Answers were rated on a five-point-Likert scale ranging from 'totally disagree' (0) to 'totally agree' (4). We summed the scores of the seven items (range 0–28) and categorised the patients into two groups: 'well-perceived health' (top half: score 0–14) and 'poor perceived health' (bottom half: score 15–28).

To measure attitudes towards physical symptoms, we used a five-item scale which included items like 'If you do not pay attention to the signals from your body, it could be too late to detect a disease' and 'If you feel something in your body, it is a sign that something is wrong'. Answers were rated on the five-point-Likert scale described above. We also summed up this score and categorised the patients in a group 'not worried about physical symptoms' (top half: score 0–10) and a group 'worried about physical symptoms' (bottom half: score 11–20).

### *Motives of patients*

The motive categories were developed based on the literature as well as patient consultations from a previous study.<sup>28</sup> We used the categories: 'I was worried', 'I urgently needed a GP', 'I wanted medical information', 'I needed a second opinion', 'I did not have time to go to the GP during the day', 'My own GP could not be contacted during office hours', 'I could not make an appointment on the same day with my own GP', 'The ED was not prepared to help me' and 'Other'.

### **Medical necessity**

In three rounds, two GPs independently judged the medical necessity of the contacts of all respondents. For this judgement the GPs used the information reported by the patient in the questionnaire, including age, reason for encounter, actions before and after the contact, and duration of the health care problem. A contact was scored as medically necessary if the GPs believed, based on their own medical view, that it was necessary to contact a GP during out-of-office hours. A contact was scored as medically unnecessary if the GPs believed the patient could have waited until office hours to contact their own GP or could have managed the problem with self-care. During two written consensus rounds, the two GPs discussed 159 cases (24.0%) on which they disagreed. The Kappa was 0.40 and the proportion of the Kappa maximum was 0.45 (because the maximum attainable kappa was 0.88 we also presented the proportion of the kappa maximum<sup>29</sup>). After these two rounds they agreed on all cases. An example of a medically necessary contact was a 75-year-old patient presenting with acute cystitis. An example of a medically unnecessary contact was a 17-year-old patient presenting with an insect bite.

## Statistical analysis

Agreement between the two GPs on the medical necessity of the contacts was measured using percentage agreement and Cohen's kappa.

Descriptive statistics were used to describe the characteristics, views and motives of the patients. Differences in these characteristics, views and motives between patients with medically unnecessary and medically necessary contacts were tested with chi-square tests (presenting p-values and degrees of freedom). Because of the large number of tests conducted, we used  $p < 0.01$  to determine the significance of the differences between the two groups. We performed a nonresponse analysis at one GP cooperative for gender and age to determine whether the respondents were representative for the total study population. Data were analysed using SPSS 20 (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Armonk, NY: IBM Corp.).

## Ethics

The research ethics committee of the Radboud university medical center (CMO Arnhem-Nijmegen) stated that the study did not fall within the remit of the Medical Research Involving Human Subjects Act (WMO). Therefore, ethical approval was not needed according to Dutch law.

## RESULTS

### Patient characteristics

The response rate was 32.3% ( $n=646$ ). After exclusion of highly urgent patients ( $n=21$ ) 625 patients remained eligible for analysis. Of the non-urgent health care problems presented, 30.4% were judged as medically necessary (95% CI 27.0-34.2). **Table 2** shows background characteristics for the total group as well as the medically unnecessary and medically necessary patient contacts. Of the respondents, 59.5% was female. Almost half of all patients contacted the GP cooperative during the weekend at daytime (47.1%). Most of the respondents lived with a partner (73.5%) and the largest proportion (59.0%) lived in an urban area. About one quarter of the patients (25.2%) had contacted their own GP at an earlier time for the same problem. More than half of the patients (57.6%) had contact with a healthcare professional (mostly their own GP) after contact with the GP cooperative.

Table 2. Characteristics of patients with non-urgent problems (%)

Characteristic	Total (n=625)	Medically unnecessary (n=435)	Medically necessary (n=190)
<i>Gender</i>			
Female	59.5	58.6	61.6
<i>Age groups</i>			
0-4	19.2	20.9	15.3
5-24	17.1	16.5	18.6
25-44	20.2	<b>23.0*</b>	<b>13.8</b>
45-64	23.4	21.9	27.0
≥65	20.0	17.7	25.4
<i>Contact time</i>			
Weekend daytime (8 AM – 5 PM)	47.1	46.8	47.8
Evening (5 PM – 11 PM)	39.8	39.8	39.7
Night (11 PM – 8 AM)	13.1	13.4	12.5
<i>Origin</i>			
Migrant <sup>1</sup>	13.5	15.3	9.5
<i>Living situation</i>			
Cohabitation with a partner	73.5	73.7	73.3
<i>Living environment</i>			
Urban	59.0	60.0	56.6
Urban rural	20.8	21.3	19.6
Rural	20.3	18.7	23.8
<i>Frequency contact GP cooperative past year</i>			
Frequent attender <sup>2</sup>	26.6	<b>29.7*</b>	<b>19.4</b>
<i>Duration of the problem</i>			
Two days or more	34.0	<b>37.9*</b>	<b>25.5</b>
<i>Contact with their own GP for same problem before contact with GP cooperative</i>			
Yes	25.2	24.3	27.3
<i>Contact with healthcare professional after contact with GP cooperative</i>			
Yes	57.6	57.2	58.4

\*p&lt;0.05, bold

<sup>1</sup> One or both parents born outside the Netherlands<sup>2</sup> Contacted the GP cooperative three times or more in the preceding year

Patients with a medically unnecessary contact were significantly more often between the ages of 25–44 years (23.0% versus 13.8%;  $\chi^2=7.06$ ,  $df=1$ ,  $p=0.004$ ) compared to patients with a medically necessary contact. They were also more often frequent attenders (29.7% versus 19.4%;  $\chi^2=6.17$ ,  $df=1$ ,  $p=0.007$ ) than patients with a medically necessary contact. Of the patients with a medically unnecessary contact, 37.9% had contacted the GP cooperative with a problem that had existed for several days, which was a significantly higher number than patients with a medically necessary contact (25.5%;  $\chi^2=8.90$ ,  $df=1$ ,  $p=0.002$ ). Although not statistically significant, patients with a medically unnecessary contact were more often migrants than patients with a medically necessary contact (15.3% versus 9.5%).

## Patient views

**Table 3** shows the views of the patients. Patients with a medically unnecessary contact expected to see a doctor less often than patients with a medically necessary contact (66.7% versus 78.1%;  $\chi^2=7.99$ ,  $df=1$ ,  $p=0.003$ ), more often thought their problem was non-urgent (27.5% versus 16.6%;  $\chi^2=8.00$ ,  $df=1$ ,  $p=0.003$ ) and more often believed that the GP cooperative is intended for all help requests (51.4% versus 36.4%;  $\chi^2=5.77$ ,  $df=1$ ,  $p=0.008$ ). There were no differences in judgement of one's own health (13.5% versus 10.9%) and attitude towards physical symptoms (23.1% versus 20.9%) between the two groups.

**Table 3. Views of patients with non-urgent problems (%)**

View	Total (n=625)	Medically unnecessary (n=435)	Medically necessary (n=190)
<i>Expectation</i>			
Expecting to see a doctor	70.1	<b>66.7*</b>	<b>78.1</b>
<i>Perception of urgency</i>			
Non-urgent	24.2	<b>27.5*</b>	<b>16.6</b>
<i>Perception of patient's own health</i>			
Poor	12.7	13.5	10.9
<i>Attitude towards physical symptoms</i>			
Worried	22.4	23.1	20.9
<i>GP cooperative is intended for all requests for help<sup>1</sup></i>			
Agree	46.6	<b>51.4*</b>	<b>36.4</b>

\* $p<0.05$ , in bold

<sup>1</sup> Question asked in two GP cooperatives

## Motives for contacting the GP cooperative

Patients with non-urgent health problems most frequently mentioned patient-related motives for contacting the GP cooperative (**Table 4**). The most frequently mentioned motive for patients with a medically unnecessary contact was worry about their own health (45.3%; medically necessary 33.2%;  $\chi^2=7.81$ ,  $df=1$ ,  $p=0.005$ ). In contrast, the most important motive for patients with a medically necessary contact was a perceived need for urgent contact with a GP (44.2%; medically unnecessary 29.8%;  $\chi^2=13.27$ ,  $df=1$ ,  $p=0.000$ ). Furthermore, patients with a medically unnecessary contact more often reported a need for medical information as opposed to patients with a medically necessary contact (29.3% versus 16.8%;  $\chi^2=10.55$ ;  $df=1$ ,  $p=0.001$ ).

Table 4. Motives of patients with non-urgent problems for contacting a GP cooperative<sup>1</sup> (%)

Motive	Total (n=625)	Medically unnecessary (n=435)	Medically necessary (n=190)
<i>Patient-related motives</i>			
I was worried	41.6	<b>45.3*</b>	<b>33.2</b>
I urgently needed a GP	34.3	<b>29.8*</b>	<b>44.2</b>
I wanted medical information	25.5	<b>29.3*</b>	<b>16.8</b>
I needed a second opinion	1.6	2.1	0.5
I did not have time to go to the GP during the day	1.5	1.4	1.6
<i>Healthcare system-related motives</i>			
My own GP could not be contacted during office hours	8.3	10.1	4.2
I could not make an appointment on the same day with my own GP	5.8	4.5	8.9
The ED was not prepared to help me	1.6	1.2	2.6
<i>Other</i>	14.1	12.7	17.4

<sup>1</sup> Multiple answers were possible

\* p&lt;0.05, in bold

Healthcare system-related motives, such as telephone accessibility of daytime general practices and availability of the patient's own GP for appointments, were less frequently mentioned. Of the patients with medically unnecessary contacts 10.1% indicated that their own GP could not be contacted during office hours (medically necessary 4.2%). Of the patients with medically necessary contacts 8.9% indicated that they could not make an appointment on the same day with their own GP (medically unnecessary 4.5%).

## DISCUSSION AND CONCLUSION

### Discussion

#### *Main findings*

Nearly two thirds of the non-urgent patient contacts were medically unnecessary, while the majority of these patients assessed their problems as urgent. Patients with medically unnecessary contacts differ from patients with necessary contacts in several ways. They are younger, they are more often frequent attenders and they more often have a problem that had already existed for several days. They also assess their own problem more often as non-urgent, expect to see a doctor less often, and more often think that the GP cooperative is intended for all help requests as opposed to the group with medically necessary contacts. The groups do not differ in their perception of their own health and physical symptoms. Furthermore, we found that patients with medically unnecessary contacts appeared to be more often migrants (not statistically significant).

Patient-related motives, such as worry, a perceived need to see a GP and a need for medical information were the most important motives for contacting a GP cooperative for all patients. Worry was the most frequently mentioned motive for patients with a medically unnecessary contact, while a perceived need for urgent contact with a GP was the most often mentioned motive for patients with a medically necessary contact. Healthcare system-related motives, such as deficiencies in availability and accessibility of a patient's own GP, were also mentioned by some patients.

### *Comparison with existing literature*

Previous studies at the ED also showed that patients with medically unnecessary contacts were younger and were more often migrants.<sup>17,30,31</sup> A Canadian study found that 33% of the patients who visited a walk-in clinic felt their symptoms were of low urgency. This is somewhat higher than we found (24%).<sup>32</sup>

The most important motives for contacting a GP cooperative we found were in accordance with the study of Shipman et al., who found that concern, anxiety and the need for advice, explanation and reassurance were motives for contacting out-of-hours services.<sup>21</sup> For 10% of the patients with medically unnecessary contacts the inaccessibility of their daytime GP practice was a motive for contacting the GP cooperative. Other studies showed the same percentage (10%)<sup>33</sup> or higher (21%)<sup>12</sup>, but the study population differed from ours as there was no selection of non-urgent contacts. In addition, other studies found a relation between poorer telephone accessibility in daytime primary care and a higher consumption at the GP cooperative.<sup>34,35</sup> The results of this study may also be representative for other countries with a well-developed primary care system. In this type of system, the general practice is the usual point of entry to healthcare and the GP has a coordinating role in the delivery of healthcare.

### *Strengths and Limitations*

This is, as far as we know, the first study on motives and views from patients with non-urgent health problems who contact the GP cooperative, comparing medically necessary and unnecessary non-urgent contacts. Not all non-urgent contacts are by definition medically unnecessary and thus inappropriate. For that reason, we have focused on the patients who did not need professional care out-of-hours from a medical perspective.

Our study covers a relatively large group of patients, although a limitation of the study is the relatively low response rate. A systematic review showed that other patient satisfaction questionnaires in the setting of out-of-hours primary care services had higher response rates (39.7% to 45.7%).<sup>36</sup> Therefore, it is difficult to determine whether our results can be generalised to the whole patient population. In a non-response analysis at one GP cooperative

we found that responders seemed slightly older than non-responders. Additional analysis showed that patients in older age groups had more medically necessary contacts, so the group of patients with medically unnecessary contacts could be larger in reality. There was almost no variation in answers between these four GP cooperatives: the self-selected GP cooperatives did not differ from the GP cooperative selected by the researchers. Moreover, the GP cooperatives were spread across the Netherlands, thereby contributing to the representativeness of the results for our country.

The medical necessity of the patients' contacts was judged by two GPs based on information given by the patients in the questionnaire. The medical records of the patients were not available for this study, due to the confidentiality of such information. However, the GPs indicated that they had enough information on all cases to make a good judgement on the medical necessity of the contacts.

### **Practice implications**

Most patients with a medically unnecessary contact believe their health problem is urgent, thus justifying their contact with the GP cooperative. Yet, there is also a group who assesses their problem as non-urgent. They do not seem to be insecure about their own health and physical symptoms. In order to reduce the number of medically unnecessary patient contacts, patients should be informed of the purpose of the GP cooperative: it is intended for urgent problems that cannot wait until the next day. Frequent attenders especially, patients between 25 and 44 years old and migrants should be informed. This can be done by the GP and the triage nurse at the GP cooperative, but also by their own GP who will be informed the day after a patient contacted a GP cooperative. In addition, GPs could provide more self-care advice about non-urgent illnesses during consultations and encourage the use of internet information, because a substantial group of patients contacts the GP cooperative for medical information. This will possibly prevent patients from contacting the GP cooperative with similar health problems in the future.

The above recommendations focus on changing patient behaviour, which could prove to be a difficult aspect to influence. Other ways of reducing medically unnecessary contacts can be found in healthcare system adjustments. Although only a small group of patients with a medically unnecessary contact mentioned accessibility as a motive for contacting out-of-hours care, improvement of access to their own GP during the day may optimise use of the GP cooperative. This could be accomplished by optimising telephone accessibility during the day and possibilities for same-day appointments.<sup>34,35</sup>

## Conclusion

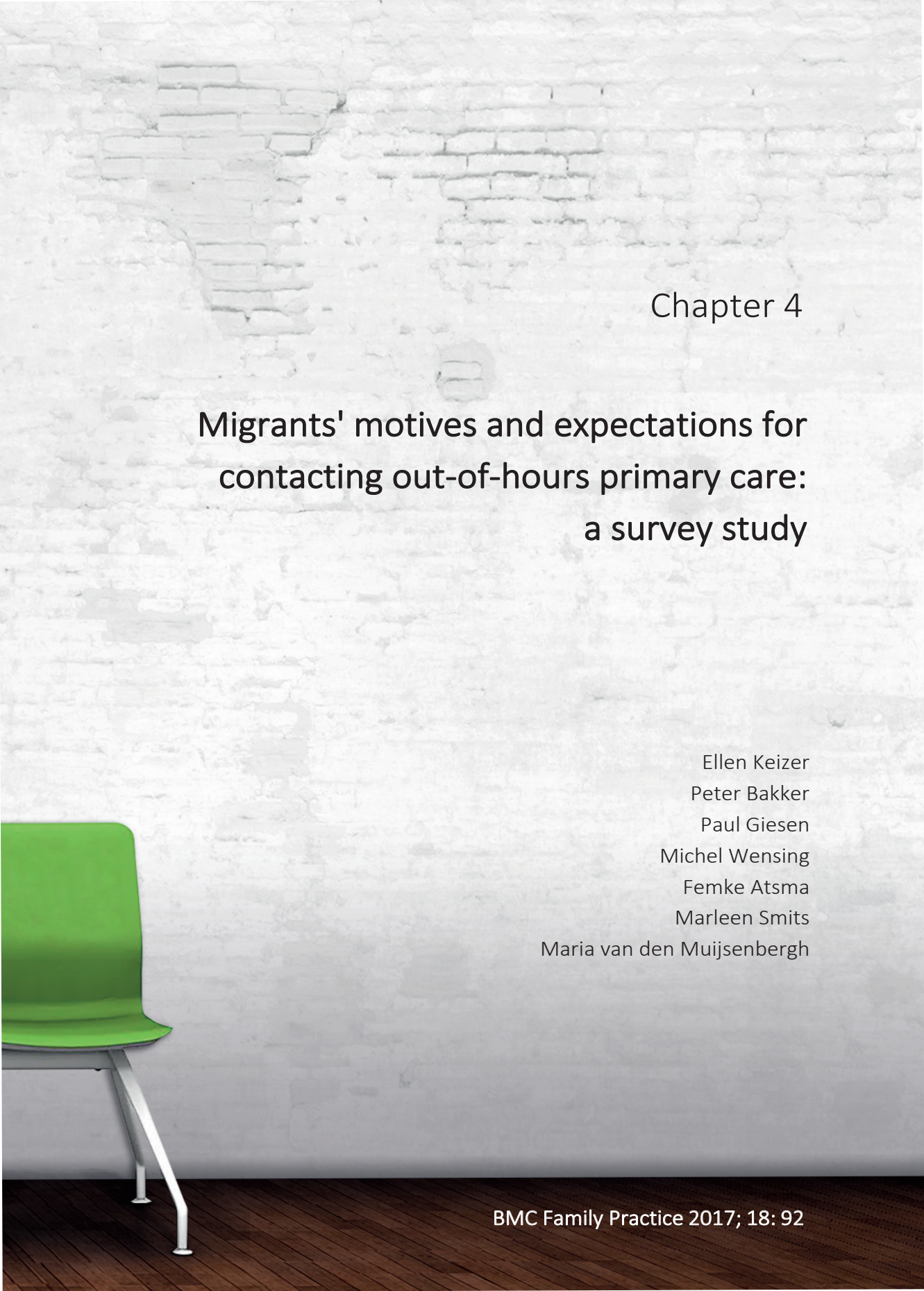
Motives for contacting a GP cooperative are mostly patient-related, but also deficiencies in access to general practices may partly explain medically unnecessary use. Efforts to change the use of GP cooperatives should focus on education of subgroups with an increased risk of contact for medically unnecessary problems. Improvement of access to daytime primary care may also decrease use of the GP cooperative.

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## Chapter 4

# Migrants' motives and expectations for contacting out-of-hours primary care: a survey study

Ellen Keizer

Peter Bakker

Paul Giesen

Michel Wensing

Femke Atsma

Marleen Smits

Maria van den Muijsenbergh

## ABSTRACT

**Background:** Migrants are more likely to use out-of-hours primary care, especially for non-urgent problems. Their motives and expectations for help-seeking are as yet unknown. The objective of this study is to examine the motives and expectations of migrants for contacting out-of-hours primary care.

**Methods:** We used data from a survey study of 11,483 patients who contacted a General Practitioner (GP) cooperative in the Netherlands between 2009 and 2014 (response rate 45.6%). Logistic regression analysis was used to test differences in motives and expectations between non-western and western migrants and native Dutch patients.

**Results:** The main motives for contacting a GP cooperative for non-western and western migrants were an urgent need for contact with a GP (54.9%-52.4%), worry (49.3%-43.0%), and a need for medical information (21.3%-26.2%). These were also the most important motives for native Dutch patients. Compared to native Dutch patients, non-western migrants more often perceived an urgent need for a GP (OR 1.65; 99% CI 1.27-2.16), less often needed information (OR 0.59; 99% CI 0.43-0.81), and more often experienced problems contacting their own GP during office hours (OR 1.71; 99% CI 1.21-2.43). Western migrants also reported experiencing problems more often in contacting their own GP (OR 1.38; 99% CI 1.04-1.84).

As well as for natives, most non-western and western migrants expected to see a doctor (46.2%-46.6%) or get advice (39.6%-41.5%). Non-western migrants expected more often to get physical examination (OR 1.53; 99% CI 1.14-2.04), and prescription (OR 1.37; 99% CI 1.00-1.88). We found no differences in expectations between western migrants and native Dutch patients.

**Conclusion:** The main motives and expectations of migrants are similar to native Dutch patients, yet migrants (especially non-western) more often wanted action from the GP, e.g. examination or prescription, and less often passive forms of assistance such as giving information or advice. At the same time they experience problems accessing their own GP. We recommend stimulation of self-care, education about the purpose of a GP cooperative, and examination and improvement of accessibility of daytime primary care.

## BACKGROUND

There is a worldwide increase in migration flows between countries.<sup>1</sup> The Netherlands has also experienced an increase in the number of migrants. In 2015, 3.7 million inhabitants were migrants or children of migrants, which constituted 22% of the Dutch population.<sup>2</sup> Of these migrants, 56% have a non-western background and 44% a western background. By 2060, the proportion of these migrants is expected to have increased up to 31%.<sup>3</sup>

Migrants' utilisation of healthcare services has often been investigated, showing a variety of results. Most studies found that migrants have a relatively high use of both primary care and some types of specialist care, while preventive care and other forms of healthcare are used less frequently.<sup>4-7</sup> Studies also showed differences in healthcare use between various migrant groups,<sup>8,9</sup> most notably between migrants with a non-western and a western origin. Non-western migrants also appear to have a higher use of primary healthcare services compared to western migrants. The demand of out-of-hours primary care turned out to be higher in deprived areas, where a relatively higher number of non-western migrants reside.<sup>10</sup> Moreover, general practices with a larger number of migrants in their patient population were found to have higher out-of-hours primary care use.<sup>11</sup>

Previous studies at the Emergency Department (ED) and out-of-hours primary care showed that migrants more often use care for problems that are unnecessary from a medical perspective.<sup>12-14</sup> A possible explanation is that non-western migrants differ in help-seeking behaviour and have other expectations of healthcare than native citizens, because they are used to a different healthcare system in their country of origin, have a poorer health status<sup>15-17</sup> and have lower health literacy skills.<sup>18,19</sup> Another reason could be linked to differences in the perception of urgency. Problems that may well be considered as non-urgent in the Netherlands, are often considered as urgent in other countries. This is likely to be caused by higher morbidity and mortality rates from infectious diseases in non-western countries compared to western countries.<sup>20</sup>

In the Netherlands, each patient has to be registered in a general practice of his own choice, with general practitioners (GP) acting as gatekeepers for secondary care. Referrals are needed for visits to medical specialists in hospitals and are initiated and coordinated by the GP.<sup>21</sup> Migrants with residence permit have the same entitlements to GP care as all other Dutch people. Out-of-hours primary care is provided by 120 large-scale GP cooperatives.<sup>22</sup> The cooperatives serve 99% of the Dutch population of 17 million and are available every evening, night, weekend and during the holidays. Each GP cooperative has 50 to 250 GPs who provide care to 100,000 to 500,000 citizens. Every GP has to do a minimum number of shifts at the GP

cooperative to maintain his/her registration as a GP. Patients are classified in urgency categories from high to low urgency. Key features of GP cooperatives in the Netherlands are listed in **Table 1**.

The GP cooperative is intended for urgent help requests that cannot wait until the regular consultation hours of the patient's own GP. However, in practice, a large part of the help requests proved to be non-urgent from a medical perspective (45%).<sup>23</sup> As (non-western) migrants are more likely to use care for non-urgent problems, gaining insight into the motives and expectations of migrants for contacting GP cooperatives can be of value. We expect that their motives are often worry and a perceived need to see a doctor for a physical examination, because of the differences in contextual circumstances in their country of origin, such as morbidity and mortality from infections. Previous research has also shown that migrants more often perceive problems with their own GP's accessibility.<sup>24</sup> Therefore, low accessibility to daytime general practice could also be a motive for contacting out-of-hours primary care. Since the migrant population is increasing, it is clearly relevant to understand the motives and expectations of this particular population. The objective of our study is to examine the motives and expectations of migrants for contacting out-of-hours primary care.

**Table 1. Features of general practitioner (GP) cooperatives in the Netherlands and charging system** <sup>22,23,44</sup>

Theme	Feature
<b>General</b>	<ul style="list-style-type: none"> <li>• Out-of-hours primary care has been provided by large-scale general practitioner (GP) cooperatives since the year 2000</li> <li>• Every GP has to do a minimum number of shifts at the GP cooperative to maintain his/her registration as a GP</li> <li>• Participation of 50–250 GPs per cooperative with a mean of 4 hours on call per week with a compensation of about €65/hour</li> <li>• About 120 GP cooperatives in the Netherlands</li> <li>• Population of 100,000 to 500,000 patients with an average care consumption of 250 contacts/1,000 inhabitants per year</li> <li>• Out-of-hours defined as daily from 5 p.m. to 8 a.m., all public holidays and the entire weekend</li> <li>• Per shift GPs have different roles: supervising telephone triage, doing centre consultations or home visits</li> <li>• The triage is supervised by telephone consultation doctors who can be consulted in case of doubt, while also checking and authorising all calls</li> </ul>
<b>Location</b>	<ul style="list-style-type: none"> <li>• GP cooperative usually situated in or near a hospital</li> <li>• Distance of patients to GP cooperative is 30 km at most</li> </ul>
<b>Accessibility</b>	<ul style="list-style-type: none"> <li>• Access via a single regional telephone number, meaning the first contact is mostly with a triage nurse (only 5-10% walk in without a call in advance)</li> <li>• Telephone triage by nurses supervised by GPs: contacts are divided into telephone advice (38%), centre consult (52%), or GP home visit (9%)</li> </ul>
<b>Facilities</b>	<ul style="list-style-type: none"> <li>• Home visits are supported by trained drivers in identifiable fully equipped GP cars (e.g. oxygen, intra venous drip equipment, automated external defibrillator, medication for acute treatment)</li> </ul>

Theme	Feature
	<ul style="list-style-type: none"> <li>Information and communication technology (ICT) support including electronic patient files, online connection to the GP's car, and sometimes connection with the electronic medical record in the GP's daily practice</li> </ul>
Charging system	<ul style="list-style-type: none"> <li>Healthcare is largely covered by health insurance</li> <li>All residents over 18 years pay a monthly premium to their health insurance provider. There is no premium for children</li> <li>Employers pay a part of their employee's income to the tax administration for healthcare costs</li> <li>Patients do not have to pay an additional amount for GP care, both during and outside office hours</li> <li>Residents over 18 years must an annual deductible (385 euro in 2016) in case of use of healthcare (including emergency departments). This deductible is neither applicable to GP care, nor to children</li> </ul>

## METHODS

### Design, setting and population

We used an existing dataset of survey studies on patient experiences, which we performed in stratified samples of patients who contacted a GP cooperative between 2009 and 2014. Data from 11,483 patients were available (response rate 45.6%). Stratification was based on the type of contact: equal numbers of questionnaires were distributed to patients who only had a telephone contact, patients who had a GP consultation at the GP cooperative, and patients who had a GP home visit. Data from a convenience sample of 42 GP cooperatives (from a total of approximately 120) spread across the Netherlands were used.

### Questionnaire

For our study, we used the Consumer Quality Index (CQI) GP cooperatives.<sup>25</sup> This Dutch questionnaire was developed by the department of IQ healthcare of the Radboud University Medical Center Nijmegen and validated in the general population of the GP cooperative.<sup>26</sup> The questionnaire included questions about patient characteristics, expectations of healthcare, motives for seeking healthcare, and patient experiences in healthcare. In this study we used only a part of the questionnaire, namely the motives and expectations for contacting the GP cooperative as well as the origin of the patient and his/her parents. Patients had to indicate for each motive and expectation whether it actually applied to them. These motives and expectations were the outcome measures in our study. Age, gender, education and health status of patients were used for case-mix adjustment in data analysis. Health status was measured with a 5-point Likert scale by asking patients to describe their own health (very good, good, fair, bad, very bad).

## Procedure

At each GP cooperative, a representative sample of 600 patients received the questionnaire by post in a four-week period from 2009 to 2014. Patients received the questionnaire between four and ten days after their contact with the GP cooperative, while a reminder was sent after one week and after three weeks.

We asked the parents of patients aged under 12 to fill in the questionnaire. The following exclusion criteria were used: dying or deceased patients; patients who contacted the GP cooperative for administrative reasons or for confidential problems; patients residing abroad; exceptional telephone stalkers (calling several times without a help request) and patients who declared not to be willing to participate in research.

The three questions in the questionnaire about the origin of the patient, his/her father and his/her mother were used to determine whether a patient was a western migrant, a non-western migrant or a native Dutch patient. Migrants were defined in accordance with Statistics Netherlands, meaning that at least one parent was born abroad.<sup>27</sup> The patients were divided into three groups: non-western migrants (originating from Africa, Latin America, Asia -except Indonesia and Japan- or Turkey), western migrants (originating from European countries -except Turkey-, North America and Oceania, Indonesia or Japan) and native Dutch patients (both parents born in the Netherlands). If the parents were born in different countries outside the Netherlands, we used the mother's country of birth to determine the patient's origin. When the country of birth of the parents was unknown, we used the country of birth of the patient to define the origin. If the parents completed the questionnaire for their child we used their data to determine the origin.

## Statistical analysis

Missing data occurred on the outcome variables motives (n=416; 3.6%) and expectations (n=155; 1.3%), as well as origin (n=629; 5.5%), gender (n=1,060; 9.2%), age (n=1,050; 9.1%), education (n=1,321; 9.1%) and self-reported health status (n=1,544; 13.4%). Results from a MNAR (missing not at random) test showed that the missing data appeared to be at random. We used multiple imputation (MI) to impute missing values (five imputation sets).

Descriptive statistics were used to describe patient characteristics, motives and expectations for contacting the GP cooperative. For each motive and expectation, differences between migrants and natives were tested with logistic regression analysis, while pooled odds ratios were calculated (pooling of all odds ratios of the single imputation sets into one overall odds ratio). To account for clustering of patients within GP cooperatives, the variable GP

cooperative was added as a covariate in the analyses. In the analyses, we corrected for age, gender, education and self-reported health status, as these patient characteristics might influence the response tendencies of the respondents.<sup>28,29</sup> Differences between migrants and natives were tested for motives and expectations with sufficient response heterogeneity (at least 5%/95%). This means that enough discrimination between the yes and no group was needed. Models were constructed for the following motives: urgent need for a GP, worry, need for medical information, own GP could not be contacted during office hours, and for all expectations. In order to account for multiple testing, we used  $p < 0.01$  (99% CI) to determine the significance of the differences between the groups of origin.

Goodness of fit between the observed and predicted outcomes of the logistic models were assessed based on the Hosmer-Lemeshow test and its discrimination ability was assessed based on the area under the receiver operating curve (AUC). Since it is not possible in SPSS to pool the Hosmer-Lemeshow test and the AUC results, we presented the results of one single imputation set. Data were analysed using the Statistical Package for the Social Sciences (SPSS) 22.

## RESULTS

### Multiple imputation

After multiple imputation of our data, we compared the descriptive statistics of the patient characteristics, motives and expectations of the original data with the pooled data. As the results were almost similar, we decided to present the results of the pooled data.

### Patient characteristics

**Table 2** shows a description of the study population for the different groups of origin. Of the respondents, 4.1% ( $n=475$ ) were non-western migrants, 6.1% ( $n=700$ ) western migrants and 89.8% ( $n=10,308$ ) native Dutch patients. We noticed a few minor differences between the origins of the groups regarding distribution in gender, education and self-reported health status. Compared to native Dutch patients, the non-western migrants in our sample seemed younger.

Table 2. Description of study population (%)

Characteristic	Non-western (n=475)	Western (n=700)	Native Dutch (n=10,308)
<i>Gender</i>			
Male	39.9	40.1	42.9
Female	60.1	59.9	57.1
<i>Age groups</i>			
0-4	11.7	5.8	8.2
5-17	36.6	17.4	18.3
18-44	36.4	42.1	36.5
45-64	9.1	24.0	25.3
≥65	6.2	10.7	11.7
<i>Education</i>			
Low (≤ 10 years education)	38.2	35.8	42.7
Medium (11-14 years education)	38.2	33.4	32.4
High (≥ 15 years education)	23.6	30.8	24.9
<i>Self-reported health status</i>			
Excellent / very good	26.2	35.0	37.1
Good	46.7	37.2	38.8
Moderate / poor	27.1	27.8	29.4

### Motives for seeking healthcare

The most frequently mentioned motives for both non-western and western migrants to contact a GP cooperative were urgent need for a GP (54.9% - 52.4%), worry (49.3% - 43.0%) and need for medical information (21.3% - 26.2%) (**Table 3**). These motives were also most often mentioned by native Dutch patients. We found some minor differences between migrants and native Dutch patients (**Table 4**). Non-western migrants more often perceived an urgent need for contact with a GP as opposed to native Dutch patients (OR 1.65, 99% CI 1.27-2.16, corrected for gender, age, education and self-reported health status). They less often mentioned a need for medical information as a motive for contacting a GP cooperative (OR 0.59, 99% CI 0.43-0.81). They also reported more often that they could not contact their own GP during office hours (OR 1.71, 99% CI 1.21-2.43). Western migrants also mention more often that they could not contact their own GP during office hours (OR 1.38, 99% CI 1.04-1.84). We found no other differences in motives between western migrants and native Dutch patients. All four logistic models achieved sufficient calibration (Hosmer-Lemeshow test's *P* range of 0.129-0.171 in a single imputation set) and discrimination (AUC range of 0.606-0.651 in a single imputation set).

Table 3. Motives and expectations of patients for contacting a GP cooperative (%)

	Non-western (n=475)	Western (n=700)	Native Dutch (n=10,308)
<b>Motive<sup>1</sup></b>			
I urgently needed a GP	54.9	52.4	48.2
I was worried	49.3	43.0	45.3
I needed medical information	21.3	26.2	27.2
My own GP could not be contacted during office hours	18.7	15.7	12.2
I had been referred to the GP cooperative by another caregiver	3.6	3.5	4.6
I did not have time to go to the GP during the day	3.3	1.9	1.3
The ED was not prepared to help me	3.0	2.1	0.8
I needed a second opinion	2.6	1.1	0.8
<b>Expectation<sup>1</sup></b>			
Seeing a doctor	46.2	46.6	44.5
Advice	39.6	41.5	39.7
Physical examination	27.4	18.6	19.3
Prescription or medication	24.5	20.3	17.1
Reassurance	24.0	19.8	16.6
Referral to a hospital	12.2	13.2	12.0
Treatment (e.g. a stitch)	7.4	7.4	7.5

<sup>1</sup> Multiple answers were possible

Table 4. Logistic regression of motives and expectations of patients for contacting a GP cooperative (n=11,483)

	OR Non-western <sup>1,2</sup> (99% CI)	OR Western <sup>1,2</sup> (99% CI)
<b>Motive</b>		
I urgently needed a GP	<b>1.65 (1.27-2.16)*</b>	1.13 (0.91-1.41)
I was worried	0.96 (0.73-1.28)	0.92 (0.74-1.14)
I needed medical information	<b>0.59 (0.43-0.81)*</b>	0.96 (0.74-1.25)
My own GP could not be contacted during office hours	<b>1.71 (1.21-2.43)*</b>	<b>1.38 (1.04-1.84)*</b>
<b>Expectation</b>		
Seeing a doctor	1.23 (0.96-1.59)	1.09 (0.87-1.35)
Advice	0.79 (0.59-1.07)	1.09 (0.87-1.35)
Physical examination	<b>1.53 (1.14-2.04)*</b>	0.94 (0.71-1.23)
Prescription or medication	<b>1.37 (1.00-1.88)*</b>	1.22 (0.94-1.59)
Reassurance	1.34 (0.96-1.85)	1.28 (0.99-1.67)
Referral to a hospital	1.28 (0.87-1.90)	1.10 (0.81-1.49)
Treatment (e.g. a stitch)	1.00 (0.60-1.67)	0.98 (0.64-1.50)

OR = Odds Ratio; CI = Confidence Interval; \* p&lt;0.01, in bold

<sup>1</sup> Reference category: Native Dutch patients<sup>2</sup> Corrected for gender, age, education and self-reported health status

### Expectations of healthcare

The expectations most often mentioned for both non-western and western migrants were seeing a doctor (46.2% - 46.6%) and getting advice (39.6% - 41.5%) (**Table 3**). Native Dutch patients also mentioned these expectations most often. A smaller group of non-western migrants expected to get a physical examination (27.4%), or expected prescription or medication (24.5%), or to be reassured (24.0%). A small group of non-western and western patients expected to be referred to a hospital (12.2% - 13.2%) or to receive treatment (e.g. a stitch) (both 7.4%). There were two significant differences between non-western migrants and native Dutch patients and no differences between western migrants and native Dutch patients (**Table 4**). Non-western migrants more often expected to get a physical examination (OR 1.53, 99% CI 1.14-2.04) and to get a prescription or medication (OR 1.37, 99% CI 1.00-1.88) compared to native Dutch patients. All seven logistic models achieved both calibration (Hosmer-Lemeshow test's mean *P* range of 0.173-0.966 in a single imputation set) and discrimination (AUC range of 0.576-0.664 in a single imputation set).

### Subgroup analyses

Due to a relatively small number of migrants, we showed the results for two main groups of migrants: non-western and western. These two groups being heterogeneous, we performed subgroup analyses for the largest countries of origin. We found no major differences in motives and expectations between the countries.

## DISCUSSION AND CONCLUSION

### Principal findings and interpretation

The most important motives for contacting a GP cooperative were similar for both migrants and native Dutch patients, namely worry, an urgent need for a GP and a need for medical information. We also found some differences, especially between non-western migrants and native Dutch patients. Compared to native Dutch patients, non-western migrants more often perceived an urgent need for contact with a GP. On the other hand, they less often mentioned a need for medical information. This could be explained by the fact that non-western migrants may have lower health literacy skills, resulting in poorer knowledge of healthcare services<sup>18</sup> and not knowing when to contact a GP cooperative.<sup>19,30</sup>

Migrants also reported more often that they could not contact their own GP during office hours. The accessibility of daytime general practice could be worse for migrants, because they are residing more often in urban areas where telephone accessibility in daytime general

practices is generally poorer than in rural areas.<sup>31</sup> Moreover, longer telephone waiting times in daytime primary care are known to be associated with a higher use of out-of-hours primary care.<sup>11</sup> In addition, due to language barriers, migrants may have poorer negotiation skills, leading to barriers of accessing daytime general practice.<sup>32,33</sup>

Regardless of origin, most patients expected to see a doctor or to get advice. Non-western migrants more often expected to get a physical examination or to get a prescription or medication as opposed to native Dutch patients. Whenever migrants went to a physician in their country of origin, they were used to getting a physical examination or prescription and were reassured by these actions.<sup>34</sup> This could be possibly account for these differences.

### Comparison with existing literature

To our knowledge, the motives or expectations of migrants for contacting a GP cooperative have not been studied previously. The most often mentioned motives for contacting a GP cooperative mentioned in our study are in accordance with a British study on motives of the general public for contacting a primary care out-of-hours service.<sup>35</sup> Moreover a Dutch study about non-urgent contacts found worry, the perceived need for urgent contact with a GP and the need for medical information as most important motives for contacting a GP cooperative.<sup>14</sup> The importance of a physical examination in medical encounters, especially with migrants, is known from national as well as international qualitative studies.<sup>34,36,37</sup>

Our finding that migrants experience difficulties in the accessibility of their own GP is consistent with a British study, which found that patients in deprived areas perceived more difficulties in accessing their GP during consultation hours.<sup>32</sup> A Danish study found that migrants more often reported going to the ED because they could not contact a GP, or were not able to explain their problem on the telephone.<sup>33</sup> A Norwegian study reported that migrants were less likely to consider contacting a GP before attending the ED, because they thought it would take too long to make an appointment to consult a GP and they expected the ED to be better able to deal with their problem than a GP.<sup>38</sup>

### Strengths and Limitations

A strength of our study is that we used a large dataset for this research, with a large group of patients from different GP cooperatives spread across the Netherlands. About one third of all Dutch GP cooperatives participated in this research. Our analyses were controlled for patient characteristics and cluster effects, while missing values had been imputed. The response

rate was 45.9%, which is similar to response rates in other patient questionnaires in the setting of out-of-hours primary care services (39.7% to 45.7%).<sup>39</sup>

A limitation of our study is that we were not able to perform a non-response analysis; therefore it is difficult to determine whether our results are representative of all patients contacting a GP cooperative. The proportion of migrants was low compared to the proportion of migrants in the Dutch population, especially non-western migrants (4.1% versus 12.1%). Possibly, less integrated migrants were less likely to answer the questionnaire, due to language barriers.<sup>40</sup> Compared to the Dutch population, the distribution of the educational level of non-western migrants in our sample was the same. Even so, this is not representative of the whole non-western migrant community in the Netherlands (lower educational level).<sup>41</sup> Moreover, it is unlikely that this is representative of the population who contacted a GP cooperative. This bias is due to the research method used: a written questionnaire in Dutch. Therefore, the migrants in our sample are not representative of all migrants in the Netherlands. Based on literature we can assume that lower educated non-western migrants face even more barriers in consulting their GP during daytime, due to limited health literacy.<sup>42</sup> In the analyses we corrected for self-reported health status, which is a subjective health measure reflecting a person's general perception of health. However, self-reported health status is widely used in several studies, also among migrants, being a good predictor of objective health status.<sup>43</sup>

The number of migrants being small, we showed the results for two main groups of migrants: non-western and western. We are aware that these are two heterogeneous groups. Subgroup analyses for the largest countries of origin in the Netherlands showed that no major differences existed between those countries. In our study we did not have information about the urgencies of the contacts, neither about the medical history of the patients. Therefore it was not possible to relate the motives and expectations to the medical urgency (according medical professionals) of the contacts, which may (partly) explain the differences in motives and expectation between non-western migrants and native Dutch patients.

### **Implications for practice and future studies**

Our results provide us with leads for practice and further research. It is important that migrants are informed about the healthcare system in the country in which they currently reside. Migrants are known not to be always very well-informed about the system.<sup>30</sup> Information on the purpose of the GP cooperative can be provided in general practices, during integration courses or in social meetings of migrants.

In addition, tailored communication by the patients' own GPs is essential, breaking down possible language barriers and taking into account low literacy. GPs could examine the expectations of their patients during consultations, give self-care advice if possible and inquire whether their patients accept and understand the advice given. This can be combined with an explanation about the Dutch healthcare system. The accessibility of daytime general practice could be a subject of further study. We recommend to examine whether the daytime GP practice is less accessible for migrants, and if so, how this can be improved. We also recommend to study the health literacy of migrants to manage their (minor) problems at home, possibly with support of primary health care organisations. Their experiences can help other migrants to gain access to daytime general practice or to use self-care. For the future our advice would be to offer this questionnaire also orally and in other languages, to reach a larger and more representative group of migrants. Finally, an in-depth qualitative study could provide further insight into the motives, expectations, and circumstances that increase the likelihood of migrants accessing out-of-hours primary health care. Combining this qualitative information with our quantitative results could lead to more concrete recommendations for practice.

## Conclusion

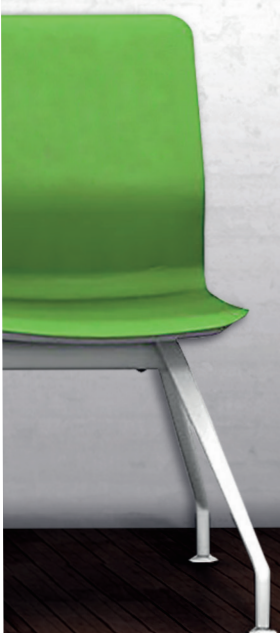
Worry, the perceived need for a GP and for medical information are the most important reasons for contacting a GP cooperative, regardless of the patient's ethnic background. Patients expect to see a doctor and to get advice. Compared to native Dutch patients, non-western migrants more often want their GP to undertake some kind of action, e.g. an examination or prescription, and not just provide passive forms of assistance such as medical information. At the same time, they experience problems accessing their own GP during office hours. We recommend the stimulation of self-care, educating migrants about the purpose of a GP cooperative and examining and improving access to daytime primary care, especially for migrants.

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## Chapter 5

# Reducing the use of out-of-hours primary care services: a survey among Dutch general practitioners

Ellen Keizer  
Irene Maassen  
Marleen Smits  
Michel Wensing  
Paul Giesen

## ABSTRACT

**Background:** Out-of-hours primary care services have a high general practitioner (GP) workload with increasing costs, while half of all contacts are non-urgent.

**Objectives:** To identify views of GPs to influence the use of the out-of-hours GP cooperatives.

**Methods:** Cross-sectional survey study among a random sample of 800 GPs in the Netherlands.

**Results:** Of the 428 respondents (53.5% response rate), 86.5% confirmed an increase in their workload and 91.8% felt that the number of patient contacts could be reduced. A total of 75.4% GP respondents reported that the 24-h service society was a 'very important' reason why patients with non-urgent problems attended the GP cooperative; the equivalent for worry or anxiety was 65.8%, and for easy accessibility, 60.1%. Many GPs (83.9%) believed that the way telephone triage is currently performed contributes to the high use of GP cooperatives. Measures that GPs believed were both desirable and effective in reducing the use of GP cooperatives included copayment for patients, stricter triage, and a larger role for the telephone consultation doctor. GPs considered patient education, improved telephone accessibility of daytime general practices, more possibilities for same-day appointments, as well as feedback concerning the use of GP cooperatives to practices and triage nurses also desirable, but less effective.

**Conclusion:** This study provides several clues for influencing the use of GP cooperatives. Further research is needed to examine the impact and safety of these strategies.

## INTRODUCTION

Out-of-hours primary care in the Netherlands generally takes place at general practitioner (GP) cooperatives.<sup>1,2</sup> These GP cooperatives are set up for urgent help requests that cannot wait until the regular consulting hours of the patient's own GP. Key features of GP cooperatives and the charging system in the Netherlands are listed in **Table 1**. Telephone triage nurses assess the urgency of the patient's health problem and make a decision about the appropriate action to be taken: refer the patient to the emergency department or ambulance service, make an appointment for GP consultation or home visit, give the patient self-care advice by telephone or advise to visit their own GP the next working day.<sup>1</sup> In the Netherlands, since the establishment of GP cooperatives in the year 2000, the number of patient contacts at GP cooperatives increased to 4 million contacts in 2014 (250 contacts per 1000 inhabitants per year).<sup>3</sup> Still about half of all contacts at the GP cooperatives, as well as one third of all clinic consultations are non-urgent (U4 or U5).<sup>3</sup> From a medical perspective, a proportion of non-urgent health problems can wait until office hours or be managed by the patient without further professional care. Likewise, at the emergency department (ED) there is also a great demand for care of patients with non-urgent problems.<sup>4</sup> Contacts of patients with unnecessary problems lead to inefficient use of resources.<sup>5–7</sup> In the Netherlands, the total cost of evening duties, night duties as well as weekend duties have increased in the period between 2010 and 2014 by more than 62 million euros (26%).<sup>6</sup> A previous study showed that 85% of GPs feel that patients receive too much care at the out-of-hours services.<sup>8</sup> For a lot of GP cooperatives the high number of contacts leads to a high workload, which could in turn lead to negative results for the quality of care and the motivation of GPs to be on duty.<sup>9</sup>

Little is known about strategies to reduce the use of GP cooperatives. However, there are several studies about strategies to reduce non-urgent use of the hospital ED.<sup>10</sup> Many of these strategies focus on co-payment for patients or a combination of financial incentives and education outreach.<sup>11–13</sup> The objective of this study was to identify views of GPs to influence the use of the out-of-hours GP cooperative.

## METHODS

### Design and population

We performed a cross-sectional survey study among a random sample of 800 GPs, which is almost 10% of all GPs in the Netherlands.<sup>14</sup> We have taken the sample from the address list of the Netherlands Institute for Health Services Research (NIVEL). Using computer generated numbers in SQL, they took a random sample of all GPs, excluding those who had recently received an invitation for participation in another study and those who stated not to be willing

to participate in research. We sent all 800 GPs a survey in September and October 2012, to be filled in on paper or digitally. GPs received a reminder after two weeks. Ethics approval was not needed for this study.

**Table 1. Features of general practitioner (GP) cooperatives in the Netherlands and charging system** <sup>1,3,20,30</sup>

Theme	Feature
<b>General</b>	<ul style="list-style-type: none"> <li>• Out-of-hours primary care has been provided by large-scale GP cooperatives since the year 2000</li> <li>• Every GP has to do a minimum number of shifts at the GP cooperative to maintain registration as GP</li> <li>• Participation of 50–250 GPs per cooperative with a mean of 4 hours on call per week with compensation of about €65/hour</li> <li>• About 120 GP cooperatives in the Netherlands</li> <li>• Population of 100,000 to 500,000 patients with an average care consumption of 250/1000 inhabitants per year</li> <li>• Out-of-hours defined as daily from 5 p.m. to 8 a.m. holidays and the entire weekend</li> <li>• Patients are classified in urgency categories from high to low urgency (U1:2,1% U2:13,7% U3:35,3% U4:20,9% U5:27,5% in 2014)</li> <li>• Per shift GPs have different roles: supervising telephone triage, doing centre consultations or home visits</li> <li>• The triage is supervised by telephone consultation doctors: they can be consulted in case of doubt, and they check and authorise all calls</li> </ul>
<b>Location</b>	<ul style="list-style-type: none"> <li>• GP cooperative usually situated in or near a hospital</li> <li>• Distance of patients to GP cooperative is maximally 30 km</li> </ul>
<b>Accessibility</b>	<ul style="list-style-type: none"> <li>• Access via a single regional telephone number, meaning the first contact mostly is with a triage nurse (only 5-10% walk in without a call in advance)</li> <li>• Telephone triage by nurses supervised by GPs: contacts are divided into telephone advice (40%), centre consult (50%), or GP home visit (10%)</li> </ul>
<b>Facilities</b>	<ul style="list-style-type: none"> <li>• Home visits are supported by trained drivers in identifiable fully equipped GP cars (e.g. oxygen, intra venous drip equipment, automated external defibrillator, medication for acute treatment)</li> <li>• Information and communication technology (ICT) support including electronic patient files, online connection to the GP car, and sometimes connection with the electronic medical record in the GP daily practice</li> </ul>
<b>Charging system</b>	<ul style="list-style-type: none"> <li>• Healthcare is largely covered by health insurance</li> <li>• All residents over 18 years pay a monthly premium to their health insurance provider. There is no premium for children</li> <li>• Employers pay a part of their employee's income to the tax administration for healthcare costs</li> <li>• Patients do not have to pay an additional amount for GP care, both inside and outside office hours</li> <li>• Residents over 18 years must pay an annual deductible (€375 in 2015) in case of use of healthcare (including emergency departments). This deductible is not applicable for GP care and also not for children</li> </ul>

## Questionnaire

We developed our questionnaire based on an inventory of policy advisers and managers of GP cooperatives, in which they were asked about possible steps that had been taken to reduce

the use of GP cooperatives, and based on literature and existing questionnaires. The resulting concept was presented to three successive expert panels, asking them to assess the questionnaire on phrasing and comprehensiveness. The expert panels consisted of three researchers, three GPs and two representatives of associations (the Dutch Association of Out-of-hours Services, now called InEen, and the Dutch College of General Practitioners; NHG).

The respondents were able to answer questions on patients' motives for contacting a GP cooperative on a three-point scale ('unimportant', 'somewhat important' and 'very important'). The GPs reported their own perceptions of the patients' motives for contacting the GP cooperative. Questions on the role of telephone triage and on strategies for reducing the number of patient contacts could also be answered on a three-point scale ('no influence' 'slight influence' or 'a lot of influence'); whereas questions on the advisability of the strategies could be answered on a two-point scale ('advisable' or 'not advisable'). The respondents could mention other motives and strategies than those mentioned in the questionnaire, in open-ended questions.

## Analysis

The analyses are descriptive and the results are reported in percentages. The data have been analysed using SPSS 20.0.

## RESULTS

### Respondents' characteristics

The response to the questionnaire was 53.5% (n=428). 53.2% of the respondents was male, the mean age was 48 (SD 8.5). Most GPs worked in a dual practice (31.5%) or a group practice (30.8%). The others worked in a solo practice (20.0%), a healthcare centre (15.3%) or somewhere else (2.4%). Most of them worked in an urban area (41.7%) or in a suburban area (41.7%), and 16.5% worked in a rural area.

### Workload at the GP cooperative

The majority of GPs indicated that they have experienced an increase in workload at the GP cooperative for a few years now (46.7% 'a little' and 39.8% 'a lot'). Almost all GPs felt that the use of the GP cooperative could certainly be reduced (46.6% 'a little' and 45.2% 'a lot').

## Patients' motives

**Table 2** shows the possible motives, according the GPs, for visiting the GP cooperative with a non-urgent problem. The five motives that scored the highest percentage of GPs who reported this motive as 'very important' were the development of the 24-h service society (75.4%), worry or anxiety (65.8%), the easy accessibility of the GP cooperative (60.1%), not having the time during the day (53.5%) and not wanting to take any risks (52.2%).

**Table 2. Reasons for patients with non-urgent problems to visit the GP cooperative, according to GPs.**

	Not important (%)	Somewhat important (%)	Very important (%)
The development of the 24-hours service society (n=426)	1.9	22.8	75.4
Worry or anxiety of the patient (n=427)	0.7	33.5	65.8
Easy accessibility of the GP cooperative (n=426)	7.7	32.2	60.1
Not having time during the day to visit the GP (n=426)	3.8	42.7	53.5
Patient does not want to take any risk (n=423)	3.5	44.2	52.2
Not knowing when to visit the GP cooperative (n=424)	13.2	52.4	34.4
Familiarity with the GP cooperative (n=424)	15.8	51.4	32.8
Anonymity at the GP cooperative (n=424)	45.3	37.0	17.7
Limited accessibility of patient's own GP: waiting time for a consultation is too long (n=425)	42.8	45.6	11.5
Second opinion (n=424)	25.9	63.4	10.6
Limited accessibility by telephone of patient's own GP (n=425)	49.4	40.7	9.9
Satisfaction with the GP cooperative (n=423)	47.8	45.6	6.6
Bad relationship with patient's own GP (n=427)	54.8	43.3	1.9

\* Other reasons mentioned in an open-ended question were impatience, poor knowledge about body and health, demanding and idle patients, poor triage and/or organisation of GP cooperative.

## Triage

A substantial part of the GPs (83.9%) felt that the way telephone triage is currently performed leads to many patients with non-urgent problems unnecessarily getting a clinic consultation or a home visit. 87.0% thinks this is because the triage system (mostly Netherlands Triage Standard (NTS)) is not strict enough (62.4% 'a little'; 24.6% 'a lot'), while 84.6% feels that it is caused by the characteristics of the triage nurse, such as experience, education, attitude and personality (60.8% 'a little'; 23.8% 'a lot').

## Strategies to reduce the use of GP cooperatives

We presented the respondents with a number of strategies that could possibly lead to a reduction in the use of GP cooperatives. **Table 3** shows how they assessed the effectiveness of these strategies, while also reporting whether or not they found them advisable. Their assessment of the effectiveness of co-payment for patients strongly depended on how much the contribution would be: the higher the amount, the more influence the respondents

expected of it. An additional analysis showed that 32% of the GPs did not want any co-payment at all.

**Table 3. Influence and advisability of strategies to reduce the use of GP cooperatives**

	No influence (%)	Some influence (%)	A lot of influence (%)	Advisable (%)
<b>Financial incentives</b>				
• Introducing co-payment of < €10 per contact (n=415 <sup>a</sup> /397 <sup>b</sup> )	21.9	58.1	20.0	47.4
• Introducing co-payment of €10-30 per contact (n=410/412)	4.4	37.1	58.5	39.6
• Introducing co-payment of > €30 per contact (n=404/412)	3.5	11.9	84.7	13.1
• Allocating more duties at the GP cooperative to GPs and GP practices with a high non-urgent (U4/U5) use of GP cooperatives (n=409/416)	64.5	31.3	4.2	13.0
• Docking on GPs and GP practices with a high non-urgent (U4/U5) use of GP cooperatives in the reimbursement of the health insurer (n=405/415)	68.4	27.2	4.4	4.8
<b>Patient education</b>				
• Starting a national patient education campaign (by the Dutch College of GPs and the Dutch Association of Out-of-hours Services) on the purpose and the use of GP cooperatives (n=418/414)	6.2	69.1	24.6	91.5
• Giving feedback to frequent users by patients' own GPs (n=419/415)	8.1	62.1	29.8	89.2
• Encouraging using (reliable) health sites such as thuisarts.nl (n=418/409)	14.6	72.5	12.9	88.5
• Informational booklets at the GP practice on the purpose and the use of GP cooperatives (folders, website) (n=418/412)	13.6	71.5	14.8	85.9
• Setting up a national website on the purpose and the use of GP cooperatives (n=418/408)	30.4	59.3	10.3	72.5
<b>GP practices</b>				
• Allocating time during consulting hours to see patients on the same day (n=418/410)	9.8	48.1	42.1	91.0
• Improving accessibility by telephone of the GP practice during the day (n=421/403)	16.2	54.6	29.2	90.1
• Training GPs in encouraging patients self-management (n=418/406)	32.8	56.0	11.2	55.4
• Setting up an evening consulting hour (n=414/404)	18.8	52.9	28.3	30.7
• Introducing an open consulting hour in the late afternoon (n=414/408)	33.3	54.8	11.8	18.6
• Introducing an open consulting hour in the morning (n=414/407)	53.4	37.2	8.5	17.2
<b>Triage</b>				
• Stricter triage (GP cooperatives only to be used for urgent patient contacts) (n=417/404)	3.1	39.8	57.1	80.9
• Larger role for the telephone consultation doctor in dealing with doubtful non-urgent cases (U4/U5) (n=419/408)	5.0	43.4	51.6	79.2
<b>Feedback</b>				
• Annual feedback to the triage nurse about the percentage of consultations and home visits compared to other triage nurses (n=416/410)	10.7	62.7	26.4	88.0

	No influence (%)	Some influence (%)	A lot of influence (%)	Advisable (%)
• Annual feedback to GPs of the number of GP cooperative contacts compared to other practices (n=418/415)	21.8	65.3	12.9	86.0

<sup>a</sup> n Influence

<sup>b</sup> n Advisable

\* Other strategies mentioned in an open-ended question were substitution of care from GPs to nurse practitioners for non-urgent problems and giving feedback to triage nurse on final diagnosis or action.

Other financial strategies, such as allocating more duties at the GP cooperative or docking payments on GPs or GP practices with a high non-urgent (U4/U5) use of GP cooperatives were considered not effective and not advisable by the respondents.

Most GPs felt that patient education would be advisable and expected that to be of 'some influence'. This type of patient education informs patients on the use of GP cooperatives by means of a national patient education campaign (91.5%), informational booklets at the GP practice (85.9%) or a national website (72.5%). It also contains strategies such as giving feedback to frequent users in the GP's own practice (89.2%) and encouraging the use of reliable health sites where patients can find information about their health problem (88.5%).

GPs also preferred some adjustments regarding the accessibility and availability of daytime general practices. Most important in this respect were improving accessibility by telephone (90.1%) and allocating time during consulting hours to see the patient on the same day (91.0%); only a small part of the GPs preferred the introduction of an evening consulting hour (30.7%). A small majority (55.4%) approved of the idea to train GPs in encouraging patient self-management. For the most part the respondents expected these adjustments to have 'some influence'.

Nearly all respondents (96.9%) expected a stricter triage to be of influence (57.1% 'a lot of influence') in reducing patient contacts, while 80.9% felt that stricter triage would be advisable. There is almost an equal amount of support for the idea to assign a larger role for the telephone consultation doctor in dealing with non-urgent doubtful cases: 51.6% expected this step to have 'a lot of influence', while 79.2% felt it to be advisable.

Eighty-six per cent of the respondents thought it to be a good idea if GPs were to receive an annual overview of the number of GP cooperative contacts from their own practice compared to those from other practices, and 88.0% felt it advisable to give feedback to triage nurses at the GP cooperatives regarding the percentage of clinic consultations and home visits assigned by them compared to that of other triage nurses. The respondents thought for the most part that this type of feedback would have 'some influence' on healthcare consumption.

## DISCUSSION

### Main findings

A major part of the GPs consulted experience an increase in workload at the GP cooperative, while they all feel that the use of GP cooperatives could be reduced. GPs believe the five most important motives for patients with non-urgent problems to contact the GP cooperative are: the development of the 24-h service society, worry or anxiety, easy accessibility of the GP cooperative, not having the time during the day to go to their own GP and not wanting to take any risk. A substantial number of GPs feel that telephone triage as it is currently performed leads to many patients with non-urgent problems unnecessarily getting a clinic consultation or a home visit. Telephone triage is a complex and vulnerable part of the out-of-hours GP care process.<sup>15</sup> Previous studies into the assessment of urgency by triage nurses at the GP cooperative show that rather than overestimating the seriousness of the request for help (1–18.8%) triage nurses more often underestimate those requests (7.1–41%).<sup>15–17</sup> The wish for stricter triage is therefore a balancing act: patient safety versus efficiency of healthcare delivery. More efficiency (fewer clinic consultations) may lead to more unsafe situations. Strategies that GPs consider both effective and advisable in the reduction of the use of GP cooperatives are introducing co-payment for patients, stricter triage and a larger role for the telephone consultation doctor when dealing with non-urgent problems. GP support for co-payment decreased when the suggested amount of the contribution increased.

### Comparison with other studies

The motives for patients contacting the GP cooperative that were reported by the GPs in our survey as being important were partly matched by those of patients themselves. For example, worry was reported by patients as being the main reason for contacting the GP cooperative, and had the second highest proportion of GP respondents in this survey reporting this reason as 'very important'.<sup>18,19</sup> Yet, a lot of our respondents think that the reason to contact the GP cooperative often is the fact that patients do not have the time to go to their own GP's consulting session during the day. However, earlier research showed that patients do not consider this an important motive at all.<sup>18</sup> Moreover, GPs in our study did not consider limited accessibility of daytime general practices as an important motive for patients to visit the GP cooperative. In contrast, data on patient contacts show that practices with limited telephone accessibility generate a higher number of patient contacts at the GP cooperatives as opposed to practices that can be more easily contacted by telephone.<sup>20</sup>

A previous Dutch study among 1022 GPs showed that 77% would prefer co-payment for patients visiting the GP cooperative.<sup>21</sup> In many other Western countries co-payment for

primary care occurs.<sup>22</sup> In New Zealand, Australia and to a lesser extent in the UK, there is a lot of discussion about the pros and cons of co-payment.<sup>23</sup> Some studies show that co-payment is not an important driver for patient choice.<sup>24,25</sup> Other studies show that co-payment reduces the frequency of care use and that this decrease is greater for the social deprived patient groups.<sup>12,26,27</sup> So, co-payment may lead to more inequity and to unsafe situations for the social deprived patients.

The respondents in our study prefer a larger role for the telephone consultation doctor. Previous studies show that using a telephone consultation doctor leads to an increase in the number of consultations by telephone, while the number of consultations at the GP cooperative remains the same and the number of home visits decreases.<sup>28</sup> However, it has not been proven if the telephone consultation doctor is cost-effective.

### **Strengths and limitations**

We examined the views of a large sample of GPs about ways to reduce the use of the out-of-hours GP cooperatives. Also, we asked them to mention patient's motives to visit the GP cooperative for non-urgent problems to compare their views with those of patients. Moreover, it can help to understand why GPs gave certain answers on the question about the strategies to reduce the use of the GP cooperative.

A limitation of our study is that there were no locums involved, although they take care of part of the duties at the GP cooperative. It is possible that their judgement on the workload will be less negative. However, we do not expect this limitation to have a major effect, since most of the duties at the GP cooperative are performed by GPs themselves.<sup>9</sup>

The response rate of 53.5% was similar to response rates in other GP survey studies.<sup>29</sup> It is possible that the opinion on this subject of the non-respondents differed from the respondents, which could have led to bias. In a non-response analysis, we found that there were no statistical differences in gender between the respondents and non-respondents. Moreover, the characteristics of our respondents are comparable to those of the national GP population in terms of age, gender and practice form.<sup>14</sup>

A last limitation is that the views of the GPs may be influenced by the payment system at the GP cooperative. In the Netherlands, the GPs get a fee per hour. If they were paid per patient contact, they may have had a more positive view about workload and non-urgent contacts.

### **Implications for future studies**

Our results provide us with leads for further research. An in-depth qualitative study could provide more insight into GPs' opinions. It is not surprising that the GPs in our study were not

in favour of introducing strategies that had negative consequences for themselves (e.g. more duties per GP). Therefore, it would be useful to examine what other involved healthcare professionals, such as triage nurses and locums, patients and directors/managers of the GP cooperatives think about these measures.

The role of the telephone consultation doctor in reducing the use of the GP cooperative could also be a subject of further study. Finally, a further study into the consequences of introducing co-payment would be useful. We recommend examining whether it is advisable to apply the deductible to the use of the GP cooperative (see **Table 1** for information about the Dutch charging system).

## Conclusion

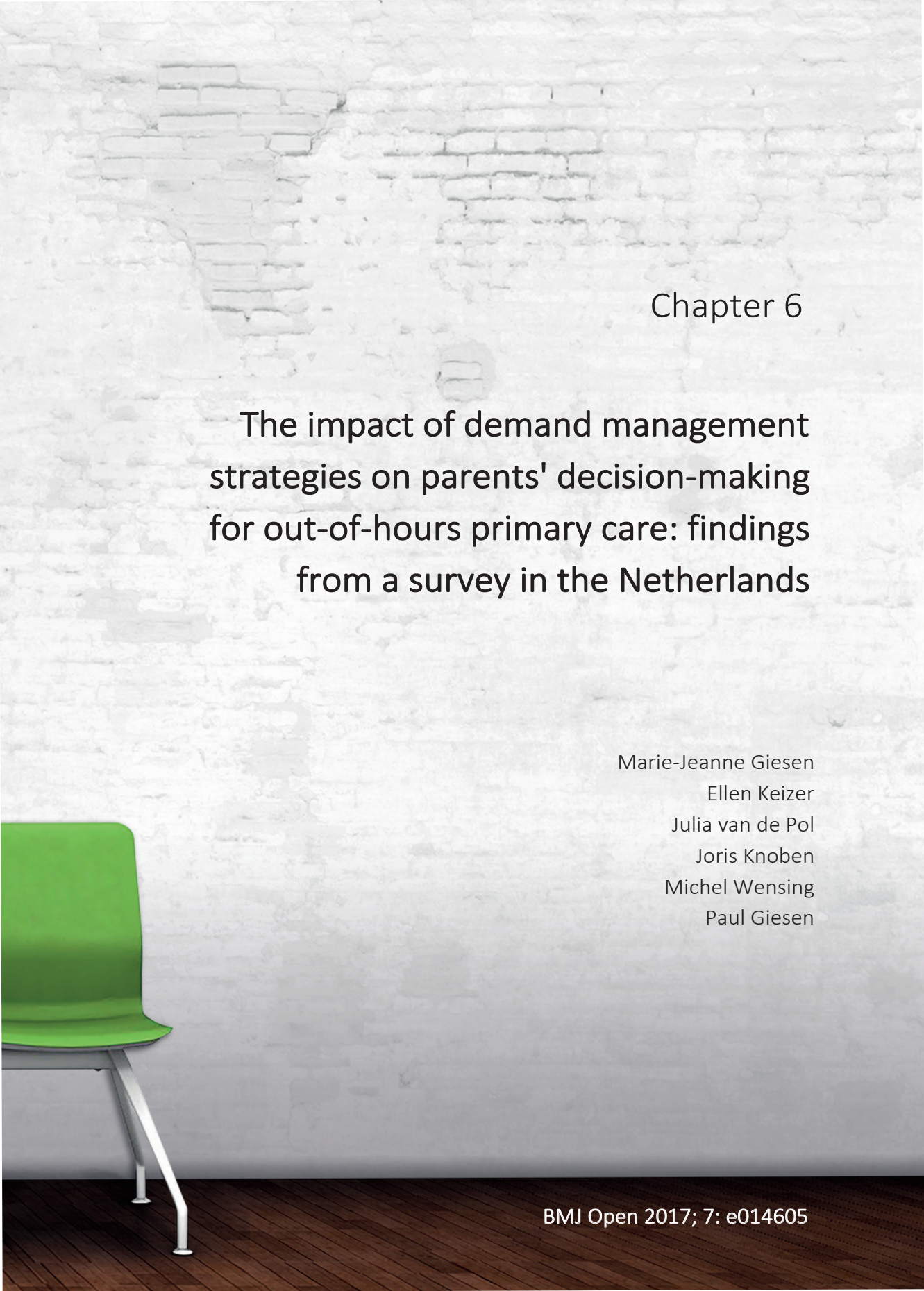
GPs think that steps have to be taken to reduce the use of GP cooperatives. Examples of effective and advisable strategies are introducing co-payment, stricter triage and a larger role for the telephone consultation doctor. Further research is necessary to study the actual effects of such strategies on the use of the GP cooperative and patient safety.

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## Chapter 6

# The impact of demand management strategies on parents' decision-making for out-of-hours primary care: findings from a survey in the Netherlands

Marie-Jeanne Giesen

Ellen Keizer

Julia van de Pol

Joris Knoben

Michel Wensing

Paul Giesen

## ABSTRACT

**Objective:** To explore the potential impact of demand management strategies on patient decision-making in medically non-urgent and urgent scenarios during out-of-hours for children between the ages of 0 and 4 years.

**Design and methods:** We conducted a cross-sectional survey with paper-based case scenarios. A survey was sent to all 797 parents of children aged between 0 and 4 years from four Dutch general practitioner (GP) practices. Four demand management strategies (copayment, online advice, overview medical cost and GP appointment next morning) were incorporated in two medically non-urgent and two urgent case scenarios. Combining the case scenarios with the demand management strategies resulted in 16 cases (four scenarios each with four demand management strategies). Each parent randomly received a questionnaire with three different case scenarios with three different demand strategies and a baseline case scenario without a demand management strategy.

**Results:** The response rate was 47.4%. The strategy online advice led to more medically appropriate decision-making for both non-urgent case scenarios (OR 0.26, 95% CI 0.11-0.58) and urgent case scenarios (OR 0.16, 95% CI 0.08-0.32). Overview of medical cost (OR 0.59, 95% CI 0.38-0.92) and a GP appointment planned the next morning (OR 0.57, 95% CI 0.34-0.97) had some influence on patient decisions for urgent cases, but not for non-urgent cases. Copayment had no influence on patient decisions.

**Conclusion:** Online advice has the highest potential to reduce medically unnecessary use. Furthermore it enhanced safety of parents' decisions on seeking help for their young children during out-of-hours primary care. Valid online information on health symptoms for patients should be promoted.

## INTRODUCTION

In the Netherlands out-of-hours primary care is provided by general practitioner cooperatives (GPCs) and is intended for urgent complaints that cannot wait until the next day.<sup>1</sup> However, half of the requests are medically non-urgent,<sup>2</sup> and many of these requests can wait until office hours or can be managed with self-care. Inappropriate, non-urgent contacts affect the motivation of triage nurses and general practitioners (GPs), and result in a higher workload which could negatively affect the quality of out-of-hours primary care.<sup>3,4</sup> Also, the cost for a consultation at the GPC is higher (about €100) than for a consultation during office hours (€40). These costs are not directly paid by patients. Patients pay a monthly overall premium to their health insurance providers. Primary care is exempted from copayment by patients, contrary to most other types of healthcare. GPs are looking for measures to reduce the number of patients with non-urgent complaints, such as copayment for patients, stricter triage and a larger role for the telephone consultation doctor.<sup>4</sup>

To support patient decision-making on healthcare use during out-of-hours and regulate demand for primary healthcare, a number of strategies could be effective. Demand management strategies are widely used in the service industry to enable effective and efficient use of capacity. When applied in healthcare, these strategies have the potential to influence the patient's perceived demand through education, financial incentives or organisational rescheduling.<sup>4-6</sup> Accordingly they can reduce demand that is unlikely to improve health<sup>5,6</sup> while having minimal effect on genuine, urgent cases so as not to jeopardise appropriate care. Demand management strategies are patient-targeted methods, which approach the aim to prevent overcrowding and enhance the efficiency of the healthcare system, while maintaining high standards of quality and accessibility. The main demand management strategy currently used at GPCs is telephone triage.<sup>6</sup> However, patients continue to visit the GPC directly, or get 'through' the triage system, with non-urgent complaints. GPs see these patients with non-urgent complaints as one of the most negative aspects of the GPC system.<sup>3</sup>

Giesen et al.<sup>7</sup> found that, of all patient populations, parents with children between the ages of 0 and 4 years most often contact the GPC with non-urgent conditions. In many of these cases, it would be more appropriate to visit the GP during daytime or apply self-care from a medical and societal perspective.<sup>7</sup> Previous research also showed that childhood fever does account for a large workload at GPCs.<sup>8</sup> Considering the potential effects of demand management strategies in healthcare, it would be valuable to explore which demand management strategies could be effective to reduce non-urgent demand at GPCs for this specific population. The objective of our study was to explore the potential impact of demand management strategies on patient decision-making in both medically non-urgent and urgent scenarios during out-of-hours for children between the ages of 0 and 4 years.

## METHODS

### Design, setting and population

We conducted a cross-sectional survey with paper-based case scenarios. Four GP practices from both rural and urban areas in the east of the Netherlands participated. A survey was sent to all families in their patient population with children aged between 0 and 4 years (n=797). A reminder was sent 2 weeks after the first invitation. The study was conducted between 2013 and 2015.

### Questionnaire

A questionnaire was developed over several rounds by researchers and medical professionals. The questionnaire included questions about the background of the patient (gender, age, education level, income, number of children, age of oldest and youngest child), followed by questions related to the paper-based case scenarios. Two pilot studies were conducted to ensure the validity of the survey and test its user-friendliness. In the first pilot study a convenience sample of individuals participated, and in the second pilot study 16 patients from one GP practice participated.

### *Strategies*

In combining the insights on demand for out-of-hours primary care with the findings from previous studies on decision-making and demand management strategies in healthcare, there are several strategies that can potentially be effective to influence the demand for GPCs.<sup>3-5,7</sup> We identified the following demand management strategies to be tested in our research: copayment, online advice, overview medical cost and direct GP appointment next morning (see online supplementary appendix A).

Copayment can be implemented via a fee that has to be paid directly by the patient. We set the fee for a GPC at €75 and for the emergency department at €150. Online advice is based on the principle to support patients in their decision-making. We presented online advice that was given by an application certified by the Dutch Society of General Practitioners (NHG). This strategy does not limit the entry to the GPC like copayment does, and may therefore be considered an interesting alternative to the copayment strategy. Another possible effective demand management strategy is to give patients insight into the cost of medical treatments. This strategy would be a midway option between the somewhat controversial copayment and education on medical conditions via online advice. The fourth demand management strategy tested is to enable patients to make an immediate next-working day appointment with their GP via an online scheduling system. This strategy could give patients the certainty of an appointment during office hours, and might thus reduce the probability they will contact a

GPC for a health condition that is non-urgent. This strategy would be particularly relevant to the patient group that sought the services of a GPC but were unable to reach their own GP or make an appointment during office hours.<sup>9</sup>

### *Case scenarios*

The case scenarios were used in an early study about telephone triage and were presented to an expert panel consisting of three triage nurses and three GPs.<sup>10</sup> The expert panel determined the 'reference standard' regarding the appropriate type of care. We included two non-urgent and two urgent common cases (see online supplementary appendix B). The non-urgent cases were cases for which contact with the GPC (the same day) was not medically necessary, and the urgent cases were cases for which contact with the GPC (the same day) was medically necessary. Combining the case scenarios selected with the demand management strategies, 16 cases were devised (four scenarios each with four demand management strategies). To test all scenario–demand strategy combinations, four questionnaires were developed. Combining the case scenarios with the demand management strategies resulted in 16 cases (four scenarios each with four demand management strategies). Each parent randomly received a questionnaire with three different case scenarios with three different demand strategies and a baseline case scenario without a demand management strategy. Due to a mistake in one of the cases in the questionnaire, we excluded the answers of 141 respondents regarding that case. The baseline case scenario was included to test how respondents would react in the different case scenarios when no demand management strategy was included.

The effects of demand management strategies on patient decision-making were verified by testing if the choices made by the respondents matched the reference standard of the expert panel. To test this, we rearranged the answers into categories. The answers to the non-urgent scenarios were categorised into 'medically appropriate demand' or 'overdemand', while the answers to the urgent scenarios were categorised into 'underdemand', 'medically appropriate demand' and 'overdemand' (**Table 1**).

Table 1. Classification answer categories

Non-urgent scenario		Urgent scenario	
Answer category	Classification	Answer category	Classification
I would wait/ apply self-care solutions	Medically appropriate demand	I would wait/ apply self-care solutions	Underdemand
I would contact my General Practitioner during office hours		I would contact my General Practitioner during office hours	
I would contact the General Practitioners' Cooperation	Overdemand	I would contact the General Practitioners' Cooperation	Medically appropriate demand
I would visit the Emergency Department		I would visit the Emergency Department	Overdemand
I would call 112 (emergency line)		I would call 112 (emergency line)	

### Statistical analyses

Descriptive statistics were used to describe the characteristics of the respondents and the percentages of overdemand and underdemand for each strategy. The choices of the parents (with either overdemand or underdemand coded as '1' and the other choices as '0') have been tested in two separate logistic regression analyses at the case level. The answers to the baseline case scenarios served as a reference category, meaning that both non-urgent and urgent scenarios presented with demand management strategies have been tested against answers given for the baseline scenarios. We corrected for patient characteristics (gender, age, amount of children, education level and income) and added the variable GP practice to account for clustering of patients within GP practices. Analyses were performed in SPSS V.22.0.

## RESULTS

### Characteristics of respondents

The response rate was 47.3% (n=377), providing answers to 1367 cases. Of the respondents 42.5% lived in urban areas, 17% in suburban areas and 40.6% in rural areas (**Table 2**). Most of the participants finished tertiary school (41.6%) and indicated their income as similar to the average Dutch household income (34.5%).<sup>11</sup> The average number of children per parent was 2.1. The mean age of the oldest child was 4.8 years and of the youngest child 1.7 years.

Table 2. Characteristics of respondents (n=377)

	%	n		%	n
<b>Gender parent</b>			<b>Area</b>		
Female	86.7	327	Rural area	40.6	153
Male	13.3	50	Suburban area	17.0	64
			Urban area	42.5	160
<b>Age parent</b>			<b>Number of children</b>		
17 – 22	2.1	8	1	30.0	113
23 – 27	13.5	51	2	45.4	171
28 – 32	30.8	116	3	16.4	62
33 – 37	30.5	115	4	4.8	18
38 – 42	17.0	64	≥ 5	3.0	13
43 – 48	4.8	18	(Mean = 2.1)		
Missing	1.3	5			
<b>Education</b>			<b>Age youngest child</b>		
No education	0.5	2	0	14.6	55
Primary school	2.4	9	1	15.1	57
Lower secondary education	11.7	44	2	21.8	82
Intermediate vocational education	41.6	157	3	13.5	51
Higher secondary education	8.0	30	4	4.2	16
Higher vocational education	25.2	95	Missing	30.8	116
University degree	9.3	35	(Mean = 1.7)		
Missing	1.3	5			
<b>Family Income</b>			<b>Age oldest child</b>		
> € 56800	34.2	129	0 to 4	52.8	199
About € 56800	34.5	130	5 to 9	38.2	144
< € 56800	27.6	104	10 to 14	7.2	27
Missing	3.7	14	15 to 21	1.9	7
			(Mean = 4.8)		

### Case scenarios

Regarding the non-urgent scenarios, 41.7% of the parents made an overdemand choice (Table 3). For the urgent scenarios, 50.3% of the respondents made an underdemand choice and 3.9% an overdemand choice.

Table 3. Under- and over-demand for case scenarios at baseline (n=371)

	Overdemand chosen		Medically appropriate demand chosen		Underdemand chosen	
Scenario	%	n	%	n	%	n
Total non-urgent scenarios	41.7	90	58.3	126	0.0	0
Swallow marble	78.2	79	21.8	22	0.0	0
Earache	9.6	11	90.4	104	0.0	0
Total urgent scenarios	3.9	6	50.3	78	45.8	71
Fever	1.2	1	79.0	64	19.8	16
Diarrhoea	6.8	5	18.9	14	74.3	55

### Case scenarios with demand management strategies

Overall, the percentage of parents who made an overdemand choice for the non-urgent case scenarios without a demand management strategy was 41.7% (**Table 4**). By providing the strategy 'online advice', the percentage of overdemand decreased by 30.4%. The strategy 'copayment' was found to reduce the probability of overdemand to 31.7%, realising a decrease of 10.0% compared with the baseline strategy. We did not find large differences when the strategies 'GP consult planned' and 'overview of medical cost' were used.

**Table 4. Over- and under-demand for each demand management strategy (%)**

	Overdemand for non-urgent case scenarios (n=609)		Under-demand for urgent case scenarios (n=752)	
	%	n	%	n
<b>Baseline strategy</b>	<b>41.7</b>	<b>90</b>	<b>50.3</b>	<b>78</b>
Online advice	11.3	8	16.5	15
Copayment	31.7	39	50.0	88
GP consult planned	44.4	48	41.0	50
Overview medical cost	35.2	32	39.4	82

An underdemand solution for the urgent case scenarios without a demand strategy ('baseline') was chosen by 50.3%. When using the strategy 'online advice', 16.5% chose an underdemand solution, a decrease of 33.8%. The strategy 'overview medical cost' reduced the probability of underdemand by 10.9%. With the use of the strategy 'GP consult planned', the probability of an underdemand decision was decreased by 9.7%. The strategy 'copayment' seems to have no influence, as with this strategy 50.0% still chose underdemand solution.

### Influence of demand management strategies on non-urgent and urgent case scenarios

**Table 5** shows that when the strategy 'online advice' was used for non-urgent cases, parents more frequently made a medically appropriate healthcare choice (OR 0.26, 95% CI 0.11-0.58). The other strategies had no influence on the parents' decisions in non-urgent cases. We also found that parents with more than one child made an appropriate choice more often than parents with just one child (OR 0.64, 95% CI 0.43-0.96).

For the urgent cases, we found that the application of online advice influences parent decision-making positively, resulting in more medically appropriate choices (OR 0.16, 95% CI 0.08-0.32). The strategy of showing the medical cost of a visit to the GPC also results in more medically appropriate choice behaviour (OR 0.59, 95% CI 0.38-0.92), as did the strategy of offering the patient the option to plan a medical consultation with the GP (OR 0.57, 95% CI 0.34-0.97). Furthermore, parents with more than one child more frequently chose an

underdemand solution for a high-urgent condition (OR 2.04, 95% CI 1.39-2.98), and similarly older parents less regularly chose an underdemand solution (OR 0.95, 95% CI 0.92-0.98).

Table 5. Logistic regression for over-demand and under-demand<sup>1</sup>

Variables	Overdemand for non-urgent case scenarios (n=591)		Underdemand for urgent case scenarios (n=734)	
	OR	95% CI	OR	95% CI
Strategy: Online advice	<b>0.26</b>	<b>0.11-0.58*</b>	<b>0.16</b>	<b>0.08-0.32*</b>
Strategy: Co-payment	0.62	0.38-1.03	0.84	0.53-1.33
Strategy: GP consult planned	0.81	0.49-1.35	<b>0.57</b>	<b>0.34-0.97*</b>
Strategy: Overview medical cost	0.97	0.56-1.70	<b>0.59</b>	<b>0.38-0.92*</b>
Gender parent: male	0.91	0.52-1.57	0.69	0.42-1.15
Age parents	1.01	0.97-1.05	<b>0.95</b>	<b>0.92-0.98*</b>
> 1 child	<b>0.64</b>	<b>0.43-0.96*</b>	<b>2.04</b>	<b>1.39-2.98*</b>
Highly educated	1.07	0.71-1.63	0.93	0.64-1.35
High income	1.07	0.71-1.63	0.94	0.65-1.37

<sup>1</sup> GP practice was added to account for clustering of patients within GP practices

OR = Odds Ratio; CI = Confidence Interval

\*p<0.05, in bold

## DISCUSSION AND CONCLUSION

### Discussion

The findings of this study imply that decisions on healthcare seeking by parents of young children can be influenced. For both non-urgent and urgent case scenarios, about half of the parents did not chose the most medically appropriate decision. Demand management strategies have the potential to help patients make medically appropriate decisions. The strategy 'online advice' seems to have the highest potential to positively influence patient demand as it influenced decisions in both urgent and non-urgent cases. The use of this strategy has both the potential of reducing medically unnecessary use of the GPC and could also enhance safety in healthcare, as patients are more likely to contact a doctor in urgent cases. Comparable results have been found in studies on the management of chronic diseases such as depression and lower back pain.<sup>12-14</sup> In the questionnaire a relatively customised advice (applicable to the specific condition) was presented, and it was mentioned that the advice was given by an online application certified by the Dutch Society of General Practitioners (NHG). This set-up of posting a 'certified' and customised advice might have had a positive influence on the patients' willingness to follow it. This is also mentioned by parents in a British study about information needs of parents for acute childhood illness.<sup>15</sup> In addition, the capabilities of the person receiving the advice also influence the way a person acts on it.

Even though 9 in 10 inhabitants in the Netherlands access the internet every day, it is still debatable whether all would actually use an online application if they would be worried or panicking about their (child's) condition. Also, it is essential to remain vigilant to how access limitations might exclude certain groups of society from accessing such information. A recent study shows that people who are older, have a higher income or live in rural areas are less likely to use mobile health applications.<sup>16</sup> On the other hand, access to internet on smartphones or notebooks is also high in socially deprived populations.

We also found that implementing copayment or giving an overview of the medical cost did not affect patient decision-making for non-urgent scenarios. In addition, for the urgent case scenarios there was no influence from implementing copayment, which would imply that it does not affect patient safety. Other studies also found that copayment was not an important driver for patient decision-making,<sup>17,18</sup> but other studies found some effects of copayment. A study at the emergency department showed a reduction in demand from patients with non-urgent conditions.<sup>19</sup> In line with this outcome, some argue that copayment stimulates patients to consider whether they really need healthcare at that moment. This would eventually contribute to lowering collective healthcare costs.<sup>20</sup> On the other hand, critics argue that the fee could deter patients with serious illnesses from visiting the emergency department<sup>21</sup> and could lead to greater inequity, especially for socially deprived patients.<sup>22,23</sup>

While we expected the 'GP consult planned' demand management strategy to affect the non-urgent cases, it only appeared to affect patient decision-making positively in relation to urgent conditions. Seemingly those seeking help for a non-urgent problem are not easily influenced by an organisational strategy.

Regarding patient characteristics, we found that patients with more children seem to make more underdemand healthcare choices, resulting in less overdemand. A possible explanation is that these parents, due to experience, are less prone to panic. Interestingly, they seem more likely to underestimate medical urgencies. Also, the probability that parents will choose an underdemand solution increases when a parent is older; we could philosophise that older parents are more able to assess a healthcare problem.

### **Strengths and weaknesses and recommendations for further research**

The selected sample is diverse in terms of residential zones, income, education, age and number of children. These characteristics reflect the Dutch population.<sup>24</sup> We chose to use written case scenarios. A drawback of this design is that respondents were confronted with hypothetical situations; consequently, emotional reactions or actual financial payments that occur in real-life situations are not completely reflected in this research. Besides, it is possible that the respondents were eager to answer 'correctly', especially for the cases in which the

strategy online advice was incorporated as they were provided with information about the appropriate response. This may have inflated the effect of this strategy. On the other hand, the information scenario was closer to reality (responders actually received it), which has enhanced the impact of this strategy. Prospective evaluation studies of demand management strategies, ideally designed as randomised trials, are required to examine their impact.

We used two non-urgent and two urgent case scenarios to test the demand management strategies. Although the cases were validated by an expert panel and they had consensus about the appropriate choice, we saw great differences in answers between the two urgent cases. We noticed that many parents chose an underdemand solution for one of the urgent cases (child with fever). In hindsight, as we did not expect such a high percentage of parents to make an underdemand choice for the urgent case scenarios (especially for the child with fever case), this case may not have been the best scenario to test the demand management strategies. Further research using more, alternate case scenarios is needed to confirm the results of this study.

There might be a relation to the amount of the copayment and its effectiveness.<sup>4</sup> In this research we only tested one amount for the GPC, but if policymakers would want a more conclusive assessment of this strategy, different amounts should be tested. Finally, although the described strategies were merely effective under either urgent or non-urgent conditions, it would be interesting to research the effects of implementing strategies simultaneously. For example, combining online advice and online overview of medical cost could possibly increase the effectiveness of the strategies.

## Conclusion

We conclude that there are demand management strategies that can influence a patient's ability to make medically appropriate healthcare choices for urgent and non-urgent conditions during out-of-hours. Guiding and advising patients online appears to have high potential, as it influences patient decision-making positively in both urgent and non-urgent conditions. Advising patients on what decision to take when a health condition occurs offers the patients a level of certainty that can positively influence their decision-making. Further research with more case scenarios is needed to confirm the results of this study. It is also necessary to study the impact of this strategy on patient safety in practice.

## Practice implications

Our study can have broad implications in a world where more people use the internet and policymakers are struggling to limit healthcare costs while maintaining high quality and safety in healthcare. This research shows the great potential of online health applications and we

believe that an independent, certified and customised tool, such as thuisarts.nl,<sup>25</sup> should be promoted. It may lead to a reduction in the use of GPCs for non-urgent complaints that could wait until the next day and to safer use for patients with urgent complaints.

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## Appendix A: Demand management strategies

### Copayment

Contacting the GPC will cost 75 euros, which will not be reimbursed by the insurance company. The cost for visiting the Emergency Department or calling 112 will be 150 euro, a fee that will also not be reimbursed by the insurance company. \*

*\* This is an hypothetical situation, in the current situation all cost for visiting a GPC or Emergency Department are reimbursed by the insurance company for children younger than 18 years old.*

### Online advice

#### *Urgent cases*

When you check the symptoms of your child online, via an App developed by the Dutch GP Association, you get the advice to contact the GPC.

#### *Non-urgent cases*

##### *Swallow marble:*

When you check the symptoms of your child online, via an App developed by the Dutch GP Association, you get the following advice:

*Give your child something to drink and (if necessary) reassure your child. Check if the marble is coming with your child's stool.*

##### *Earache:*

When you check the symptoms of your child online, via an App developed by the Dutch GP Association, you get the following advice:

*Give your child something to drink and (if necessary) a painkiller. Reassure your child and let your child sleep.*

### Overview medical cost

Contacting the GPC will cost 75 euros, visiting the Emergency Department or calling 112 will cost 150 euro. All costs would be reimbursed by your insurance company.

### Direct GP appointment next morning.

It is possible to plan an appointment with your own GP for the next morning with an online tool.

**Appendix B: Cases****Non-urgent cases***Swallow marble*

Your three-year-old child swallowed a marble. Your child does not mention to be in pain, is not nauseous, and does not cough. Your child does not have a background of medical problems, nor use any medicine. It is Saturday afternoon and your own GP is not available.

*Earache*

Your child is 4 years old and has had an earache since last night. Your child does not have fever, is conscious and alert, but has a cold (coughs and a runny nose). Your child does not have any other health problems and has a temperature of 36,7°C. It is Wednesday evening, 20.00 h and you cannot reach your own GP anymore.

**Urgent cases***Fever*

Your child is 8 months old and has fever. Last week your child had a cold, fever and was coughing seriously. It seemed that your child got better, but the fever (39,1°C) returned. Your child drinks little and still coughs. It is Tuesday evening 19.00 h, and you cannot reach your own GP anymore.

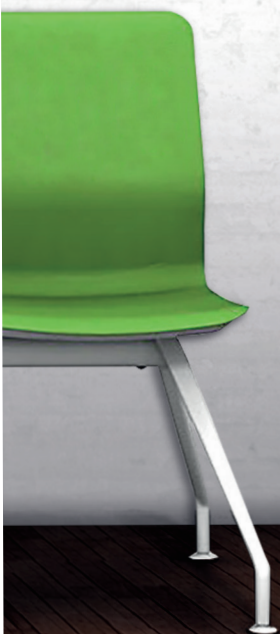
*Diarrhoea*

Your 1,5 year old child has been feeling ill for the past 2 days. Your child indicates he has a stomach-ache, is vomiting and has fluid diarrhoea. You are worried because your child drinks little and has a temperature of 38,6°C. It is unclear if your child still gets wet diapers because of the diarrhoea. You do notice that your child has a dry mouth. Your child does not have a medical history. It is Sunday morning, and your own GP is not available.



## Chapter 7

### General discussion



The aim of this thesis was to provide insight into patients' help-seeking behaviour for contacting out-of-hours primary care, especially for non-urgent problems, and to identify strategies to enhance appropriate use of out-of-hours primary care. In this final chapter, we present and discuss our main findings, provide methodological considerations, and make recommendations for daily practice and future research.

## **MAIN FINDINGS**

### **Help-seeking behaviour**

In **chapter 2** we examined factors influencing help-seeking behaviour of individuals (parents and adults) for acute health problems during out-of-hours. For parents, the following predisposing factors were related to being more inclined to contact out-of-hours care for their children: male, low education, non-western migrant, having one child, being non-anxious, and perceiving few barriers to using out-of-hours care. For adults, individuals characterised by older age, being a non-western migrant, unemployment, having social support, and perceiving few barriers to using out-of-hours care were more inclined to contact out-of-hours care. The behavioural factors 'previous contact with GP care' (for adults) and 'previous contact with out-of-hours care' (adults and parents) increased the inclination to seek help, whereas enabling and need factors were not associated with help-seeking behaviour. The wider environment, which was expressed by the factor 'country', seemed to influence the individuals' help-seeking behaviour. The model regarding parents explained 22.8% of their help-seeking behaviour, which is much better than the model about adults, which explained 8.1% of their help-seeking behaviour.

In **chapter 3** we studied the motives of patients with non-urgent problems for contacting out-of-hours primary care. Nearly two thirds of the contacts in our study were medically unnecessary, while the majority of these patients assessed their problems as urgent. Patients with medically unnecessary contacts differed from patients with necessary contacts in several ways. They were younger, they were more often frequent attenders and they more often had a problem that had already existed for several days. They also assessed their own problem more often as non-urgent, expected to see a doctor less often, and more often thought that the GP cooperative is intended for all help requests as opposed to the group with medically necessary contacts. The groups did not differ in their perception of their own health and physical symptoms.

Patient-related motives, such as worry, a perceived need to see a GP and a need for medical information were the most important motives for contacting a GP cooperative for all patients. Worry was the most frequently mentioned motive for patients with a medically unnecessary

contact, while a perceived need for urgent contact with a GP was the most often mentioned motive for patients with a medically necessary contact. Healthcare system-related motives, such as deficiencies in availability and accessibility of a patient's own GP, were also mentioned by a part of the patients.

In **chapter 4** we examined the motives and expectations of migrants for contacting out-of-hours primary care. The most important motives for contacting a GP cooperative were similar for both migrants and native Dutch patients, namely worry, an urgent need for a GP and a need for medical information. We also found some differences, especially between non-western migrants and native Dutch patients. Compared to native Dutch patients, non-western migrants more often perceived an urgent need for contact with a GP. On the other hand, they less often mentioned a need for medical information. Migrants also reported more often that they could not contact their own GP during office hours than native Dutch patients.

Regardless of origin, most patients expected to see a doctor or to get advice. Non-western migrants more often expected to get a physical examination or to get a prescription or medication as opposed to native Dutch patients.

### Strategies to enhance appropriate use

In **chapter 5** we identified views of GPs to influence the use of the out-of-hours GP cooperative. The majority of GPs consulted experienced an increase in workload at the GP cooperative, and they all felt that the use of GP cooperatives could be reduced. GPs believed the five most important motives for patients with non-urgent problems to contact the GP cooperative were: the development of the 24-hour service society, worry or anxiety, easy accessibility of the GP cooperative, not having time during the day to go to their own GP and not wanting to take any risk. A substantial number of GPs felt that telephone triage, as it is currently performed, leads to many patients with non-urgent problems unnecessarily getting a clinic consultation or a home visit. Strategies that GPs consider both effective and advisable for the reduction of the use of GP cooperatives are introducing co-payment for patients, stricter triage and a larger role for the telephone consultation doctor when dealing with non-urgent problems. GP support for co-payment decreased when the suggested amount of the payment increased.

In **chapter 6** we explored the potential impact of demand strategies on patient decision-making in both medically non-urgent and urgent case scenarios during out-of-hours for children between the age of 0 and 4 years. The strategy 'online advice' seems to have the highest potential to positively influence patient demand as it influenced decisions in both urgent and non-urgent cases. The use of this strategy has both the potential of reducing

medically unnecessary use of the GP cooperative and could also enhance safety in healthcare, as patients are more likely to contact a doctor in urgent cases.

We also found that implementing co-payment or giving insight into the medical costs did not affect patient decision making for non-urgent case scenarios. In addition, for the urgent case scenarios there was no influence of co-payment, which would imply that it does not affect patient safety in situations of medical urgency.

The strategies 'giving patients an overview of the costs' and 'giving patients the certainty to get a consultation with their own GP the next morning' had some influence on patient decisions for urgent cases, but not for the non-urgent cases.

## **INTERPRETATION OF FINDINGS**

### **Help-seeking behaviour**

Over the years, a lot of research about help-seeking behaviour has been conducted. Also, many theory-based models explaining help-seeking behaviour were developed. We used Andersen's Behavioural Model of Health Service Use<sup>1,2</sup> as a guide to examine factors influencing patients' help-seeking behaviour for acute health problems outside the regular clinic hours. It is known from other studies, also in different settings like daytime general practice and Emergency Department (ED) that some groups of people are more inclined to contact healthcare services than others. In accordance with other studies, we found that individuals who are low educated, unemployed, non-western migrant and frequent attender were more inclined to contact out-of-hours care.<sup>3,4</sup>

One factor that turns out to be important in our studies, but on which little research has been done, is the attitude towards use of out-of-hours primary care. Individuals feeling few barriers to use out-of-hours care were more inclined to contact out-of-hours care for medically unnecessary contacts. Besides, we found that a group of patients assessed their own contact with the GP cooperative as non-urgent. Apparently, there is a group of patients who believe one can use out-of-hours care for all kind of problems. This conclusion is confirmed by GPs, as they mentioned the 24-hours consumer society as most important motive for use of the GP cooperative for non-urgent problems. The Dutch healthcare system offering GP care 24 hours a day, may generate a feeling of freedom to ask for help at any time. This is contrary to the purpose of a GP cooperative from a medical and cost-perspective; intending for urgent help requests that cannot wait until the regular consultation hours of the general practice.

### *Parents of young children*

Help-seeking of parents of young children was examined in two of our studies. This group most often contacts out-of-hours primary care for non-urgent problems<sup>5,6</sup> with worry as most important motive. Previous research showed also that worry is an important motive to contact out-of-hours primary care. Parents inclination to seek help depends on their confidence in having control over the situation and whether they consider the condition to be dangerous or not.<sup>7</sup> Previous studies showed that parents seek help for what can be interpreted as lack of control or a desire to take control over the condition by knowing what it was (wish to get a diagnosis).<sup>8,9</sup>

The inclination to worry about children's health issues seems to decrease when parents have more children. In both of our studies we found that parents with more than one child are less inclined to contact out-of-hours primary care in case of a non-urgent condition. A possible explanation is that these parents, due to experience, are less prone to panic, have more experience with prognosis of common disorders, or simply have less time to attend healthcare providers.

We discovered that factors influencing help-seeking behaviour for parents are more or less the same as for adults. One remarkable finding was that fathers were more inclined to contact out-of-hours care than mothers. This is not known from other studies and we cannot give a good explanation for this result. It might be possible that fathers are less involved in conversations with other parents about children's health issues, so they are less informed about common disorders and their prognosis.

An interesting outcome of one of our studies was that we found differences in help-seeking between countries. It is difficult to explain this variation, but the national culture or healthcare system could be relevant in patient decision-making. For example, differences in employment between countries exist, making it more difficult for working individuals of one country to visit the GP during daytime than individuals of another country. Another explanation can be found in the telephone access to a GP during out-of-hours. Direct telephone access to a GP in out-of-hours may encourage parents to seek advice or help.

### *Non-western migrants*

The most mentioned motives of non-western migrants to contact out-of-hours primary care are similar to motives of native Dutch patients and are in accordance with other studies about motives of the general population.<sup>10,11</sup> Besides, we also found some small differences that may explain the higher healthcare use of non-western migrants. Compared to native Dutch patients, they more often perceived an urgent need for contact with a GP, and less often a need for medical information. This could be explained by the fact that non-western migrants

may have lower health literacy skills, resulting in poorer knowledge of healthcare services<sup>12</sup> and not knowing when to contact a GP cooperative.<sup>13,14</sup>

Migrants also reported more often to have problems with the accessibility of their own GP during office hours. The accessibility of daytime general practices could be worse for migrants, because they are living more often in urban areas where telephone accessibility in daytime general practices is generally poorer than in rural areas.<sup>15</sup> Moreover, longer telephone waiting times in daytime primary care are known to be associated with a higher use of out-of-hours primary care.<sup>16</sup> In addition, due to language barriers, migrants may have poorer negotiation skills, leading to barriers of accessing daytime general practice.<sup>17,18</sup>

Non-western migrants more often expected to get a physical examination and a prescription or medication than native Dutch patients. The importance of a physical examination in medical encounters, especially with migrants, is known from national as well as international qualitative studies.<sup>19-21</sup> Whenever migrants went to a physician in their country of origin, they were used to getting a physical examination or prescription and were reassured by these actions.<sup>19</sup> This medical culture could possibly explain these differences.

#### *Patients and GPs views about motives for contacting out-of-hours primary care*

There is a discrepancy between patients' and medical professionals' assessment of severity of health problems and thus the medically appropriateness of the contact.<sup>22-24</sup> Many GPs felt that patients in general receive too much care at the out-of-hours service<sup>25</sup> and considered the large number of non-urgent help request as one of the most negative aspects of their job.<sup>26</sup> GPs considered the 24-hours society as the most important motive for patients for visiting the GP cooperative for non-urgent problems. We identified a group of patients who think they have the right to contact out-of-hours care for all kind of problems and know their problem is not urgent. Probably, a large part of the GPs' frustrations relate to this group of patients. However, most patients think their problem is urgent and describe clear rationales for help-seeking.<sup>27</sup> Worry and anxiety seem to play a large role in these considerations, something GPs also recognised. Patients also indicated to have difficulties assessing health risks.<sup>28</sup>

GPs also think that the fact that patients do not have time to go to their own GP's consulting session during the day is an important reason to contact the GP cooperative. Patients, however, do not consider this as an important motive. GPs do not consider limited accessibility of daytime general practices as an important motive for patients to visit the GP cooperative. In contrast, a small part of the patients do mention this as a motive. This motive was also identified in other research using data on patient contacts; daytime practices with a limited accessibility and availability generate a higher number of patient contacts at the GP cooperatives as opposed to practices that can be more easily accessed.<sup>16</sup>

## Strategies to enhance appropriate use

A range of strategies could enhance appropriate use of out-of-hours primary care. Two of them we discuss below: use of internet and co-payment for patients.

### *Use of internet*

The strategy 'online advice' seems to have the potential to reduce medically unnecessary use and to enhance safety for urgent problems. Other studies showed a variety of effects. Comparable results have been found in studies on the management of chronic diseases such as depression and lower back pain.<sup>29-31</sup> In our study, a relatively customised advice (applicable to the specific condition) was presented, and it was mentioned that the advice was given by an online application (thuisarts.nl) certified by the Dutch College of GPs (NHG). This set-up of posting a 'certified' and customised advice might have had a positive influence on the patients' willingness to follow it. A recent Dutch study showed that after launching the website thuisarts.nl, the number of consultations decreased with 12% after 2 years.<sup>32</sup> However subgroup analyses did not find differences in healthcare use for the youngest age group (0-16 years). In another Dutch study about the influence of a personalised online parent information program on infant respiratory on primary care utilisation showed no reduction of healthcare utilisation.<sup>33</sup>

Even though 9 in 10 inhabitants in the Netherlands access the internet every day, it is still debatable whether all would actually use an (online) application if they would be worried or panicking about their (child's) condition. Having trust in the information on internet platforms is an important factor.<sup>34</sup> A recent Dutch qualitative study showed that parents use internet information, however only the physician was able to take away the insecurity.<sup>35</sup> In addition, the capabilities of the person receiving the advice, also influence the way a person acts upon it.<sup>36</sup> These capabilities are related to individual characteristics, such as coping style and education level. Also, it is essential to remain vigilant to how access limitations might exclude certain groups of society from accessing such information.

It is essential that the use of valid sources of information and support, such as thuisarts.nl, is supported by GPs. We also asked GPs in our survey about the effectiveness of encouraging patients to use such valid sources. A majority of GPs felt that this strategy would be advisable and expected that to be of 'some influence'. Only a few GPs thought that this would be very effective. These views were measured in 2012. Possibly, awareness of new positive research results and improvement of the contents of the website will have increased the support of thuisarts.nl by GPs.

### *Co-payment*

Co-payment for patients is considered by GPs as one of the strategies that could be effective and advisable in the reduction of the use of GP cooperatives. GP support for co-payment decreased when the suggested amount of the contribution increased. In line with this outcome, some argue that co-payment stimulates patients to consider whether they really need healthcare at that moment. This would eventually contribute to lowered expenditures on healthcare.<sup>37</sup> In our pilot study we found that introducing co-payment did not affect patient decision making for non-urgent scenarios. In addition, for the urgent case scenarios there was no influence from implementing co-payment, which would imply that it does not affect patient safety. Other studies also found that co-payment was not an important driver for patient decision making.<sup>38,39</sup> All these studies tested hypothetical situations and the willingness to pay for care. Other (older) studies showed results from experiments with co-payment. Most of them found a reduction in healthcare use.<sup>40-43</sup> However, beside a decrease of medically inappropriate use, also a decrease of appropriate use was found, as well as an increase of the hospitalization rate.<sup>41,44</sup>

Indeed, a widely discussed argument for not introducing co-payment is that the fee could deter patients with serious illnesses from getting medical care<sup>45</sup> and could lead to greater inequity, especially for socially deprived patients.<sup>46,47</sup>

## **METHODOLOGICAL CONSIDERATIONS**

Specific limitations of the studies have been discussed in the separate chapters. In this paragraph we will discuss the main methodological strengths and limitations.

This thesis focused on help-seeking behaviour of patients in out-of-hours. A strength is that we did not only examine the behaviour of patients who already contacted out-of-hours services, but also the general population. In this way, individuals who never use healthcare services are also included. In addition, we examined the views of GPs regarding motives of patients to contact out-of-hours primary care. As they are important players in applying strategies to enhance appropriate use, it is relevant to examine their views.

Another strength is that we examined a wide range of factors which can influence help-seeking behaviour. In addition to the 'general' socio-economic factors that have been studied frequently, we also explored the influence of attitudes towards use of out-of-hours primary care, and psychological factors, and combined these factors with the socio-economic factors in regression models.

Most studies were conducted in response to specific questions from the field (mostly GP cooperatives). Consequently, the study designs and methods were partly pragmatically

chosen. For instance, we developed new questionnaires, but could not validate these extensively.

In two studies help-seeking behaviour was measured by hypothetical situations. This may not represent actual behaviour. It is possible that individuals make other decisions in real life. Nevertheless, help-seeking behaviour is mainly determined by behavioural intentions.<sup>48</sup>

An important limitation of this thesis is that we only used quantitative methods, more specific questionnaires, to get our research questions answered. In-depth qualitative studies could provide further insight into individuals' help-seeking behaviour. As part of the studies for this thesis, we have conducted two small qualitative studies to gain additional insight in patients' help-seeking behaviour.<sup>28,49</sup>

## FUTURE DIRECTIONS

In this paragraph we will discuss the implications for practice and future research for enhancing appropriate use of out-of-hours primary care.

### Implications for practice

#### *Education, informing, communication*

Worry and the perceived need to see a GP are the most important motives to contact out-of-hours care. GPs could provide more self-care advice about non-urgent illnesses during consultations, both in the GP cooperative and in the daytime general practice. Tailored communication is essential to decrease the likelihood that patients return with a similar health problem. GPs could examine the expectations of their patients and inquire whether their patients accept and understand the advice given. GPs and triage nurses can also encourage the use of an independent, validated and customised tool, such as [thuisarts.nl](http://thuisarts.nl). A message about this tool can also be given to patients waiting during calling the GP cooperative.

#### *Informing about purpose GP cooperative*

A main outcome of this thesis is the influence of the patient's attitude towards use of out-of-hours primary care and how it influences help-seeking. Patients should be better informed about the purpose of the GP cooperative. This can be done by the GP and the triage nurse at the GP cooperative, but also by the own GP who will be informed the day after a patient contacted a GP cooperative. A nationwide patient education campaign could also be a strategy to inform individuals about the purpose of out-of-hours primary care. This campaign could also focus on wider use of (out-of-hours) care: ambulance services and EDs. In this national campaign, the use of an independent, validated and customised internet tool can be

encouraged. Recently the GP cooperative in Amsterdam started an online campaign for the citizens of Amsterdam to stimulate them to have a reflection moment (count to three) and not contact the GP cooperative immediately for minor problems.<sup>50</sup>

Since migrants are known not to be always very well-informed about the system<sup>14</sup>, migrants could also be informed during integration courses or in social meeting of migrants.

### *Organisation*

So far, the above recommendations focused on changing patient behaviour, which could prove to be difficult to influence. Other ways of reducing medically unnecessary contacts can be found in healthcare system adjustments.

Our results and other studies indicated that improvement of accessibility to GP care during the day may optimise use of the GP cooperative.<sup>16,51</sup> In addition, a higher continuity of GP care seems to be associated with fewer admission for ambulatory care sensitive conditions.<sup>52</sup> This could be accomplished by optimising telephone accessibility during the day, evening consultations and possibilities for same-day appointments. Given the longer waiting time during the weekend, it may be considered to offer the option for regular use of GP care on weekend days.

Introducing new technologies may also help reducing medically unnecessary use of out-of-hours primary care. For example, worried patients can share photos with the GP of the GP cooperative or have a consult by video conversation or e-mail. Nowadays, use of eHealth is still rare in Europe. GPs perceive barriers to using eHealth and consider the implementation to be complex. Interest in eHealth services is high among GPs and healthcare users and its use is likely to increase.<sup>53,54</sup>

The organisation of out-of-hours care in the Netherlands is changing. More than half of the GP cooperatives (56%, in 2015) have integrated with hospital EDs into emergency care access points ('spoedposten').<sup>55,56</sup> For most of these co-locations, the GP cooperative is responsible for the triage and treatment of self-referrals, who otherwise would present to the ED out-of-hours. A consequence of this development is that GP cooperatives have to deal with more self-referrals. This makes it even more important to influence patient flows. Possibly, this new name that refers to 'emergency care' contributes to a change of attitude towards the use of a GP cooperative. Efforts of influencing patient flows may conflict with the (financial) interest of hospitals and GP cooperatives. A common ambition of all out-of-hours emergency providers (GP cooperatives, ambulance care and EDs of hospitals) is needed. They should agree to deliver the right care at the right moment, at the right place and if possible stimulate self-care or care near the home of the patient. Besides, they should streamline their patient information following this ambition.

It is sometimes argued that GP care should be offered 24-hours a day, independently of the urgency of the problem. Opening hours of daytime general practices could be expanded. Other Dutch healthcare professionals, like the dentist or the physical therapist have also expanded their opening hours. In order to reduce the workload for GPs, specialised nurses can substitute GPs. A quasi-experimental study showed that incorporating nurse practitioners with GPs in out-of-hours primary care teams is a safe and feasible option for reducing GPs' workload in terms of the number of shifts and increasing service capacity.<sup>57</sup> Also, in daytime general practices positive outcomes are reported in terms of patient satisfaction and care outcomes.<sup>58</sup> This organisational change requires a cultural shift on the side of GPs. For small GP cooperatives, this change will be an organisational challenge.

### Recommendations for future research

An in-depth qualitative study could provide further insight into the motives, expectations, and circumstances that increase the likelihood of non-western migrants accessing out-of-hours primary care. Combining this qualitative information with our quantitative results could lead to more recommendations for practice regarding this specific group of patients.

Giving the variety of results regarding the effectiveness of using the internet in order to reduce healthcare use, we recommend to perform further research about the effectiveness and patient safety of internet tools, such as [thuisarts.nl](http://thuisarts.nl).

A substantial number of GPs feel that telephone triage, as it is currently performed, leads to many patients with non-urgent problems unnecessarily getting a clinic consultation or a home visit. Telephone triage is a complex and vulnerable part of the out-of-hours GP care process.<sup>59</sup> More efficiency (less clinic consultations and home visits) may lead to more unsafe situations. Therefore, we recommend to perform more research into the efficiency and safety of stricter triage.

Also, the role of the telephone consultation doctor in reducing the use of the GP cooperative could also be a subject of further study. In studies of two GP cooperatives about the medical necessity of clinic consultations, GP assessed that around two third of all medically unnecessary face-to-face contacts, could have been avoided by a telephone consultation with a GP.<sup>60,61</sup> Another study showed that using a physician for telephone consultation increased the number of consultations by telephone, while the number of consultations at the GP cooperative remained the same and the number of home visits decreased.<sup>62</sup> However, it has not been proven that the telephone consultation doctor is cost-effective.

Previous research showed differences in healthcare use between general practices.<sup>16</sup> Some evidence was found that organisational characteristics of general practices are associated with use of out-of-hours care. We recommend to perform more research about the influence of the

patient's own GP and practice characteristics on use of out-of-hours care. For example the influence of GPs giving feedback to frequent users of out-of-hours care or the influence of better telephone accessibility of the general practice.

We found that the factor 'country' was related to the help-seeking of individuals, but we could only speculate about the explanations for these differences. Future research should focus on the effect of healthcare systems and the culture on help-seeking.

Finally, a further experimental study into the consequences of introducing co-payment would be useful. We recommend to examine whether it is advisable to apply the annual deductible to the use of the GP cooperative, like it is now for the use of EDs.

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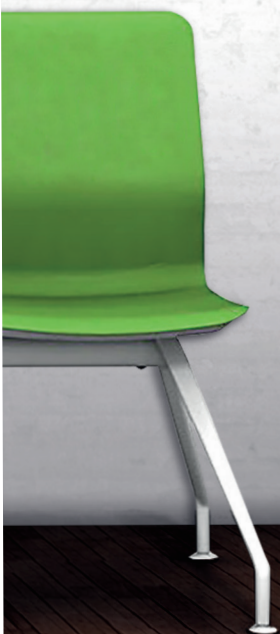
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## Summary



**Chapter 1** describes the background of this thesis. In the Netherlands, out-of-hours primary care is organised in large scale GP cooperatives. These cooperatives are intended for urgent help requests that cannot wait until the regular consultation hours of the general practice. The number of patient contacts at GP cooperatives has increased up to 4.1 million contacts in 2015 (245 contacts per 1,000 inhabitants per year). The increased number of patients contacting a GP cooperative is partly caused by patients who seek care for problems that are non-urgent and can be considered ‘inappropriate’ from a medical and cost perspective. A proportion of these non-urgent health problems can wait until office hours or can be managed by the patient without further professional care. For a lot of GP cooperatives the high number of contacts leads to a high workload, which could in turn lead to lower quality of care and less motivation of GPs to be on duty.

People differ in their help-seeking behaviour, when experiencing a health problem. Many factors can be related to citizens’ help-seeking behaviour. Little research has been done into factors influencing help-seeking outside office hours. Also, little is known about strategies to influence the use of GP cooperatives. The aim of this thesis is to provide insight into patients’ help-seeking for contacting out-of-hours primary care, especially for non-urgent problems, and to identify strategies to enhance appropriate use of out-of-hours primary care.

In **chapter 2** we aim to examine factors related to out-of-hours help-seeking behaviour of parents and adults for acute health problems. Some individuals have a high threshold for requesting medical care when experiencing a health problem, whereas others contact for harmless conditions. Many factors have been found to be related to help-seeking behaviour, for example patient characteristics and the organisation of the healthcare system.

We conducted a cross-sectional study based on data from Danish, Dutch, and Swiss parents of children aged between 0 and 4 years and adults. Seeking out-of-hours care was measured for six case scenarios. Determinants were categorised according to Andersen’s Behavioural Model. A total of 1,015 parents and 2,942 adults participated. For parents, the following factors were related to being more inclined to contact out-of-hours care for their children: male, low education, non-western migrant, having one child, being non-anxious, and perceiving few barriers to using out-of-hours care. For adults, individuals characterised by older age, being a non-western migrant, unemployment, having social support, and perceiving few barriers to using out-of-hours care were more inclined to contact out-of-hours care. Individuals with previous contacts with a GP and out-of-hours care were also more inclined to contact out-of-hours care. Beside these factors, the resident country of the contacting individual also seems to influence the help-seeking behaviour.

In **chapter 3** we study the motives of patients with non-urgent problems for contacting out-of-hours primary care. Besides patient related motives, lack of access during daytime and other deficiencies in the (primary) healthcare system may also be a motive for contacting a GP cooperative.

We performed a survey among patients with non-urgent health problems in four GP cooperatives in the Netherlands. Two GPs independently judged the medical necessity of the contacts of all 646 patients in this study. Nearly two thirds of the contacts were medically unnecessary, while the majority of these patients assessed their problems as urgent. Patients with medically unnecessary contacts were younger, more often frequent attender and often had a problem that had already existed for several days. They also assessed their own problem more often as non-urgent, expected to see a doctor less often, and more often thought that the GP cooperative is intended for all help requests as opposed to the group with medically necessary contacts. Patient-related motives, such as worry, a perceived need to see a GP and a need for medical information were the most important motives for contacting a GP cooperative for patients in both groups. Healthcare system-related motives, such as deficiencies in availability and accessibility of a patient's own GP, were also mentioned by some patients in both groups.

In **chapter 4** we examine the motives and expectations of migrants for contacting out-of-hours primary care. Migrants are more likely to use out-of-hours primary care, especially for non-urgent problems.

We used data from a survey study of 11,483 patients who contacted a GP cooperative in the Netherlands. We tested differences in motives and expectations between non-western and western migrants and native Dutch patients. Worry, the perceived need for a GP and for medical information were the most important reasons for contacting a GP cooperative. Most migrants expected to see a doctor or to get advice. These were also the most important motives and expectations for native Dutch patients. Compared to native Dutch patients, non-western migrants more often wanted their GP to undertake some kind of action, e.g. a physical examination or prescription, and not just provide passive forms of assistance such as medical information. At the same time, they experienced problems accessing their own GP during office hours.

In **chapter 5** we examine views of GPs about measures to influence the use of the out-of-hours GP cooperative. We performed a cross-sectional survey study among a random sample of Dutch GPs. The majority of the 428 GPs consulted, experienced an increase in workload at the GP cooperative, and felt that the use of GP cooperatives could be reduced. GPs believed the

five most important motives for patients with non-urgent problems to contact the GP cooperative were: the development of the 24-hour service society, worry or anxiety, easy accessibility of the GP cooperative, not having time during the day to go to their own GP and not wanting to take any risk. A substantial number of GPs felt that telephone triage, as it is currently performed, leads to many patients with non-urgent problems unnecessarily getting a clinic consultation or a home visit. Strategies that GPs consider both effective and advisable for the reduction of the use of GP cooperatives are introducing co-payment for patients, stricter triage and a larger role for the telephone consultation doctor when dealing with non-urgent problems. GP support for co-payment decreased when the suggested amount of the payment increased.

In **chapter 6** we explore the potential impact of demand strategies on patient decision-making in both medically non-urgent and urgent scenarios outside office hours for children between the age of 0 and 4 years. We conducted a cross-sectional survey with paper-based case scenarios. A survey was sent to all parents of children aged between 0 and 4 years from four Dutch GP practices. Four demand management strategies were tested: co-payment, online advice, overview of medical costs, and GP appointment next morning.

A total of 377 parents participated to the study. The strategy 'online advice' seems to have the highest potential to positively influence patient demand as it influenced decisions in both urgent and non-urgent cases. The use of this strategy has both the potential of reducing medically unnecessary use of the GP cooperative and could enhance safety in healthcare, as patients are more likely to contact a doctor in urgent cases. We also found that implementing co-payment did not affect patient decision making for non-urgent scenarios. In addition, for the urgent case scenarios there was no influence of co-payment, which would imply that it does not affect patient safety in situations of medical urgency. The strategies 'giving patients an overview of the costs' and 'giving patients the certainty to get a consultation with their own GP the next morning' had some influence on patient decisions for urgent cases, but not for the non-urgent cases.

In **chapter 7** we present the general discussion of this thesis. We summarise the main findings, discuss methodological considerations, interpret our findings in a broader context, and discuss the implications for practice and future research.

The main implications for practice are:

- informing patients about the purpose of the GP cooperative (by medical professionals and/or by a nationwide patient education campaign),
- stimulating patients in self-care for non-urgent illnesses,

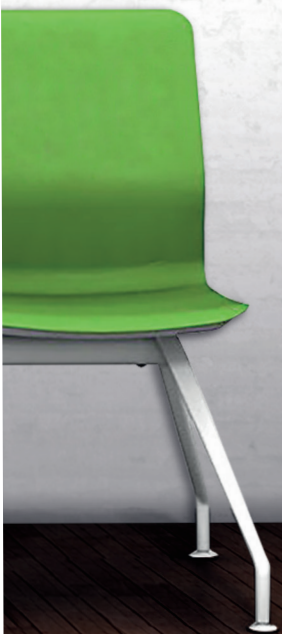
- encouraging patients in the use of internet tools (such as thuisarts.nl),
- improvement of accessibility of GP practices during office hours

Further research should include:

- an in-depth qualitative study into help-seeking behaviour of migrants,
- studies into the efficiency and safety of the use of internet tools, stricter triage, a larger role of the telephone consultation doctor, and co-payment,
- more research to the influence of GP (practice) factors, healthcare systems, and culture on help-seeking behaviour.



## Samenvatting



**Hoofdstuk 1** beschrijft de achtergrond van dit proefschrift. In Nederland is de organisatie van huisartsenzorg buiten kantoortijd georganiseerd in grootschalige huisartsenposten (HAPs). Deze HAPs zijn bedoeld voor spoedeisende hulpvragen die niet kunnen wachten tot het spreekuur van de eigen huisarts. Het aantal patiëntcontacten op de HAP is toegenomen tot 4,1 miljoen contacten in 2015 (245 contacten per 1.000 inwoners per jaar). De toename van het aantal patiëntcontacten met de HAP wordt deels veroorzaakt door patiënten die hulp zoeken voor laag urgente problemen die onnodig zijn vanuit een medisch en kosten perspectief. Een deel van deze laag urgente problemen had kunnen wachten tot het spreekuur van de eigen huisarts of met zelfzorg worden afgehandeld door de patiënt. Voor veel HAPs leidt de hoge zorgvraag tot hoge werkdruk met mogelijke negatieve consequenties voor de zorgkwaliteit en motivatie van huisartsen om dienst te doen.

Mensen verschillen in hun hulpzoekgedrag wanneer ze een gezondheidsprobleem ervaren. Veel factoren kunnen gerelateerd zijn aan het hulpzoekgedrag van mensen. Er is nog weinig onderzoek gedaan naar factoren die van invloed zijn op hulpzoekgedrag buiten kantoortijd. Ook is er weinig bekend over strategieën om het zorggebruik van huisartsenposten te beïnvloeden. Het doel van dit proefschrift is inzicht te krijgen in hulpzoekgedrag van patiënten bij het contact opnemen met de HAP, in het bijzonder voor laag urgente klachten, en om strategieën te vinden om medisch gepast gebruik van de HAP te bevorderen.

In **hoofdstuk 2** onderzoeken we welke factoren van invloed zijn op hulpzoekgedrag van ouders en volwassenen voor acute gezondheidsproblemen. Sommige mensen ervaren een hogere drempel voor het vragen van medische zorg, terwijl andere contact zoeken voor onschuldige problemen. Er zijn al veel factoren gevonden die gerelateerd zijn aan hulpzoekgedrag, bijvoorbeeld patiëntkenmerken of de organisatie van het gezondheidszorgsysteem.

We voerden een cross-sectionele studie uit gebaseerd op data van Deense, Nederlandse en Zwitserse ouders van kinderen in de leeftijd 0 tot 4 jaar en volwassenen. Hulp zoeken buiten kantoortijd is gemeten met zes case scenario's. Determinanten werden gecategoriseerd volgens Andersens Behavioural Model. In totaal namen 1.015 ouders en 2.942 volwassenen deel aan het onderzoek. Voor ouders waren de volgende kenmerken gerelateerd aan een grotere geneigdheid om voor hun kinderen contact te zoeken met zorg buiten kantoortijd: man, laag opgeleid, niet-westerse migrant, één kind hebben, geen angst ervaren en weinig drempels ervaren in het gebruik van zorg buiten kantoortijden. Volwassenen waren meer geneigd om contact te zoeken voor zorg buiten kantoortijd voor henzelf als sprake was van de volgende kenmerken: hogere leeftijd, niet-westerse migrant, werkloos, sociale steun hebben, en weinig drempels ervaren in het gebruik van zorg buiten kantoortijd. Mensen die regelmatig contact hebben met de eigen huisarts en met zorgverleners buiten kantoortijd waren ook

eerder geneigd hulp te zoeken. Ook bleek dat naast al deze factoren, het land waarin iemand woont invloed heeft op hulpzoekdrag.

In **hoofdstuk 3** bestuderen we de motieven van patiënten met laag urgente klachten om contact te zoeken met de HAP. Naast patiëntgerelateerde motieven, kunnen een beperkte toegankelijkheid overdag en andere tekortkomingen in het (eerstelijns) gezondheidszorgsysteem ook motieven zijn om contact op te nemen met de HAP.

We voerden een enquête uit onder patiënten met laag urgente klachten van vier HAPs. Twee huisartsen oordeelden onafhankelijk van elkaar over de medische noodzaak van de contacten van alle 646 patiënten in deze studie. Bijna tweederde van de contacten waren medisch gezien onnodig, terwijl de meerderheid van de patiënten hun problemen als urgent inschatte. Patiënten met medisch niet noodzakelijke contacten waren jonger, vaker veelgebruiker en hadden vaker een probleem dat al meerdere dagen bestond. Ze schatten hun eigen probleem ook vaker in als laag urgent, verwachtten minder vaak een dokter te zien en dachten vaker dat de HAP bedoeld is voor all hulpvragen, in tegenstelling tot de groep patiënten met medisch noodzakelijke contacten. Patiënt gerelateerde motieven zoals ongerustheid, het gevoel een huisarts nodig te hebben en behoefte aan medische informatie waren voor patiënten uit beide groepen de belangrijkste motieven om contact op te nemen met de HAP. Motieven gerelateerd aan het gezondheidszorgsysteem, zoals tekortkomingen in de toegankelijkheid en beschikbaarheid van de eigen huisarts, werden door een deel van de patiënten uit beide groepen ook genoemd.

In **hoofdstuk 4** onderzoeken we de motieven en verwachtingen van migranten om contact te zoeken met de HAP. Migranten maken vaker gebruik van de HAP, met name voor laag urgente problemen. We maakten gebruik van data van een vragenlijstonderzoek onder 11.483 patiënten die contacten hadden met een HAP in Nederland. We testten verschillen in motieven en verwachtingen tussen niet-westerse en westerse migranten en van oorsprong Nederlandse patiënten. Ongerstheid, de noodzaak voelen een huisarts nodig te hebben en behoefte aan medische informatie waren de belangrijkste motieven om contact te zoeken met de HAP. De meeste migranten verwachtten een dokter te zien of advies te krijgen. Deze motieven en verwachtingen werden ook het vaakst genoemd door van oorsprong Nederlandse patiënten. In vergelijking met van oorsprong Nederlandse patiënten, verwachtten niet-westerse migranten vaker dat de huisarts actie ondernam, zoals een lichamelijk onderzoek of een recept voor medicatie. Ze verwachtten minder vaak passievere vormen van hulp, zoals medische informatie. Ook ervoeren ze vaker problemen met de bereikbaarheid van hun eigen huisarts tijdens kantoortijden.

In **hoofdstuk 5** onderzoeken we de meningen van huisartsen over het beïnvloeden van het zorggebruik van de HAP. We voerden een cross-sectioneel vragenlijstonderzoek uit onder een aselechte steekproef van huisartsen. De meerderheid van de 428 ondervraagde huisartsen gaf aan een toename van de werkdruk op de HAP te ervaren en bijna allemaal vonden ze dat het gebruik van de HAP kan worden verminderd. Volgens de huisartsen waren de belangrijkste redenen om met een laag urgente klacht naar de HAP te gaan de 24-uurs maatschappij, ongerustheid of angst, de laagdrempelige toegang tot de HAP, geen tijd hebben om overdag naar de eigen huisarts te gaan en geen risico's willen nemen. Een grote meerderheid van de huisartsen vond dat de huidige manier van telefonische triage er te vaak toe leidt dat patiënten met medisch gezien laag urgente klachten een consult of visite krijgen. Strategieën die huisartsen zowel effectief als wenselijk achtten voor het verminderen van zorggebruik op de HAP waren een eigen bijdrage van de patiënt, strengere triage en een grotere rol voor de telefoonarts. De wenselijkheid van huisartsen voor een eigen bijdrage nam af, naarmate het voorgestelde bedrag hoger was.

In **hoofdstuk 6** onderzoeken we de potentiële impact van demand management strategieën op hulpzoekgedrag van ouders van kinderen tussen 0 en 4 jaar, voor zowel laag urgente als urgente scenario's buiten kantooruren. We voerden een cross-sectioneel onderzoek uit aan de hand van papieren casus. Een vragenlijst werd gestuurd naar alle ouders van kinderen in de leeftijd 0-4 jaar van vier Nederlandse huisartspraktijken. Vier demand management strategieën werden getest: eigen bijdrage, online advies, overzicht van medische kosten en zekerheid op een consult bij de eigen huisarts de volgende ochtend.

In totaal namen 377 ouders deel aan de studie. De strategie 'online advies' leek de meeste potentie te hebben om het hulpzoekgedrag van patiënten positief te beïnvloeden, aangezien deze zowel beslissingen voor de laag urgente als urgente casus beïnvloedde. Het gebruik van deze strategie heeft zowel potentie om medisch niet noodzakelijk gebruik te verminderen, maar kan ook de veiligheid verbeteren, aangezien patiënten hierdoor sneller geneigd waren contact te zoeken met de HAP bij urgente casus. We vonden ook dat het implementeren van een eigen bijdrage de neiging tot hulp zoeken niet veranderde voor de laag urgente casus. Ook voor de urgente casus was er geen invloed van een eigen bijdrage, wat impliceert dat het geen invloed heeft op de veiligheid van patiënten in spoedeisende situaties. De strategieën 'overzicht van kosten' en 'zekerheid op het krijgen van een consult bij de eigen huisarts de volgende ochtend' hadden enige invloed op keuzes voor urgente casus, maar niet voor laag urgente casus.

In **hoofdstuk 7** presenteren we de algemene discussie van dit proefschrift. We vatten de belangrijkste bevindingen samen, bediscussiëren methodologische afwegingen, interpreteren onze bevindingen in een bredere context en reflecteren op de implicaties voor beleid en toekomstig onderzoek.

De belangrijkste implicaties voor de praktijk zijn:

- patiënten informeren over het doel van de HAP (door medische professionals en/of een landelijke campagne);
- patiënten stimuleren in zelfzorg voor laag urgente klachten;
- patiënten aanmoedigen in het gebruik van online applicaties (zoals thuisarts.nl);
- bereikbaarheid van huisartsenpraktijken overdag verbeteren.

Suggesties voor toekomstig onderzoek zijn:

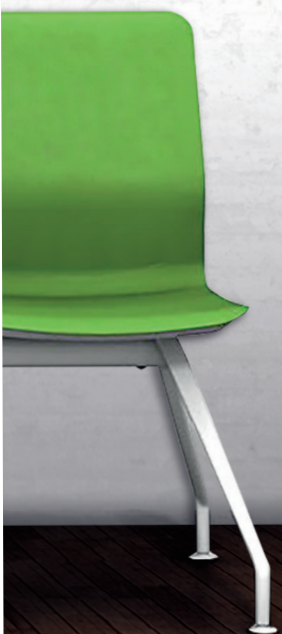
- een diepgaand kwalitatief onderzoek naar hulpzoekgedrag van migranten;
- studies over de efficiëntie en veiligheid van het gebruik van online applicaties, strengere triage, een grotere rol van de telefoonarts en een eigen bijdrage voor patiënten;
- meer onderzoek naar de invloed van huisarts (praktijk) factoren, gezondheidszorgsystemen en cultuur op hulpzoekgedrag.



Dankwoord

About the author

Bibliography



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Ellen, november 2017

## ABOUT THE AUTHOR

Ellen Keizer was born on April 9, 1985 in Heino (Overijssel), the Netherlands. She finished high school at Carmel College Salland in Raalte in 2003. She then moved to Nijmegen to study Sociology at the Radboud University in which she was awarded the degree of Master of Science in 2007.

In 2008, she started working as a research assistant at the department IQ healthcare of the Radboud university medical center. She participated in a wide range of research projects with different topics and supported PhD-students with organising their projects and performing statistical analyses.

In 2011, she started working as a researcher in the emergency care (spoedzorg) research group and in 2015 she officially started her PhD study. Besides working on research projects for her PhD thesis, she worked on many other projects in the field of out-of-hours primary care and general practice. These include the development and validation of questionnaires (Patient Reported Outcome Measures (PREMs) for GP cooperatives and General Practice) and an instrument to measure quality of telephone triage (KERNset). Since 2015 she has participated in the European Research network for out-of-hours primary care (EurOOHnet). As part of this collaboration, she worked on a project with Danish and Swiss colleagues that has resulted in a paper for this thesis.

Currently, Ellen is working as a researcher at the Institut für Hausarztmedizin, UniversitätsSpital (Institute for Primary Care, University Hospital) in Zürich, Switzerland.



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