Variations in general practitioners’ views of asthma management in four European countries

R. Wahlström, P. Lagerløv, C. Stålsby Lundborg, C.C.M. Veninga, E. Hummers-Pradier, L.O. Dahlgren, P. Denig, the DEP group

Abstract

The aim was to identify differences and similarities in views regarding asthma management among general practitioners in four European countries (Germany, Netherlands, Norway and Sweden), and to explore reasons for suboptimal performance. The results are to be used for the development and tailoring of educational interventions. Semi-structured interviews with 20 GPs in each country were conducted and analysed using a phenomenographic approach. The domains of (i) general view of asthma, (ii) the doctor–patient relationship in managing asthma, and (iii) overall management of asthma (treatment goals and evaluation of results) were approached during the interviews. There were different ways of experiencing phenomena related to asthma management both within and between the four countries. Three general views on asthma were found where different perspectives were emphasised: a medical, a ‘global’ (including community health, social and environmental aspects) and a patient’s perspective. Within the medical perspective, only a few German doctors emphasised a psychological aetiology of asthma. The views on the doctor–patient relationship described as ‘authoritarian’, ‘teaching’ or ‘empowering’ occurred similarly in all countries. The majority of the doctors showed confidence in the effectiveness of the pharmaceutical treatment of asthma, some doctors were concerned about limitations, but only in Germany a few doctors were explicitly critical of the values of conventional pharmaceutical treatment. The main treatment goals were either conceived as getting the patient symptom-free (Netherlands, Norway, and Germany) or to control the inflammatory process (Sweden). Several German and some Norwegian doctors expressed the view that patients had to accept the disease and learn how to manage it, while a few German doctors aimed at alternative treatments of asthma. The existence of qualitatively different ways of experiencing asthma management, both in and between countries, calls for consideration when trying to implement general evidence-based treatment guidelines. A variation of approaches in continuing medical education for GPs is needed to address such existing beliefs and conceptions that could sometimes be opposed to the content of educational messages.

Keywords: Phenomenography; Asthma; General practice; Attitudes; Conceptions
Introduction

Looking at different guidelines it seems there is not much controversy on the basic principles of asthma treatment (National Heart Lung and Blood Institute, 1992; Medical Products Agency, 1993; Vennerod, 1994; Kristufek & Hruskovic, 1996; Geijer, van Schayck, & van Weel, 1997; Nicklas, 1997). In practice, however, quite some variation and sub-optimal management has been observed when comparing knowledge and attitudes with prescribing in five European countries (Lagerlöf et al., 2000). The appropriateness of actual asthma management has been challenged repeatedly in the last years (Lang, Sherman, & Polansky, 1997; Legorreta et al., 1998; Smeele et al., 1998; Kljakovic & Mahadevan, 1998; Gourgoulianis, Hamos, Christou, Rizopoulou, & Efthimiou, 1998; Roghmann & Sexton, 1999). Various barriers exist for a successful integration of evidence-based medicine into clinical practice (Grol, 1992; Davis & Taylor Vaisey, 1997; Haynes & Haines, 1998). Some of these barriers relate to attitudes and beliefs held by patients (Green & Britton, 1998), while others relate to the doctors' attitudes, views, and knowledge (Grol, 1992; Doerschug, Peterson, Dayton, & Kline, 1999). To understand the foundations of such barriers qualitative research is needed (Dahlgren & Pramling, 1985; Green & Britton, 1998). Seemingly inappropriate behaviour may be understood better if the related conceptions or ways of experiencing the situation are illuminated (Schön, 1987; Marton, Hounsel, & Entwistle, 1998). Knowledge on the doctors' ways of experiencing their own clinical practice and relationship with patients can be used to develop tailored interventions for improving clinical performance (Wahlström, Dahlgren, Tomson, Diwan, & Beerman, 1997; Fishbein, 1976).

When this study was planned, little was known of how doctors look upon and relate to asthma management (Bauman, McKenzie, Young, & Yoon, 1990). Since then several studies focusing on doctors' attitudes and views regarding asthma management have been conducted in the USA, Canada and Australia, but most were quantitative studies based on mailed questionnaires (Grant, Moy, Turner-Roan, Daugherty, & Weiss, 1999; Moy, Grant, Turner-Roan, Li, & Weiss, 1999; Cicuttto, Llewellyn-Thomas, & Geerts, 1999; Coates et al., 1994). A few qualitative studies have been reported from Great Britain (St Claire, Watkins, & Billinghamurst, 1996), Belgium (Van Ganse et al., 1997), and Netherlands (Jans, Schellevis, van Hensbergen, Dunkers van Emden, & van Eijk, 1998). Notable findings are that treatment outcomes are not sufficiently monitored by doctors, that the use of peak-flow meters is not fully accepted, and that some doctors are reluctant to educate their patients. In one of the studies, some doctors questioned the prolonged prescription of inhaled corticosteroids for patients with mild asthma (Jans et al., 1998). These findings confirm that concordance with current guideline recommendations is sub-optimal, but the underlying reasons have not been thoroughly investigated. One may expect that views from doctors in one country can not directly be generalised across countries (Kahan, Weingarten, & Appelbaum, 1996).

In the joint Drug Education Project (DEP), general practitioners' views and conceptions on asthma management were studied in four European countries. Semi-structured interviews were conducted with a sample of general practitioners (GPs) in each of the four countries, i.e. Germany, Netherlands, Norway, and Sweden. Some of the findings, based on national data, have already been reported elsewhere (Lagerlöf, Leseth, & Matheson, 1998; Stålsby Lundborg, Wahlström, & Dall’Alba, 1999; Veninga, Denig, Heyink, & Haaijer-Ruskamp, 1998). These national analyses did not cover all aspects of asthma management, making direct comparison of the results problematic. Therefore, an additional international study was conducted using the original data collected in each country.

The aim of the international study presented here was to identify the differences and similarities in views regarding the management of asthma among GPs working in different countries, and to explore reasons for sub-optimal performance. The results are to be used for the development and tailoring of educational programmes to improve drug treatment and overall management of asthma.

Methods

The study has been conducted using the phenomenographic approach, which is a descriptive, empirical and content-oriented line of qualitative research (Marton, 1981, 1988), exploring views of phenomena in the world as they are conceived. The focus is on the experienced reality. The approach aims at preserving the experiential content of verbal expressions, minimising interpretation and avoiding application of predetermined categories of description. In phenomenographic analysis categories of conceptions are described as they emerge from the content of the interviews. The analysis is concerned with how the surrounding world is experienced and how this is expressed as conceptions or views of a certain object or phenomenon and how the interviewed person relates to this phenomenon. The main focus of investigation is a description of the variation in the way humans experience and relate to phenomena.

Twenty general practitioners (GPs) were recruited in each country and were asked to take part in interviews regarding asthma and its management. The procedure of selecting doctors for the interviews was somewhat different in the four countries. Doctors already recruited to the main intervention study (DEP) were not eligible in
any of the four countries. In Germany, the doctors worked outside the DEP study area, and were recruited using an authorised list of practising doctors. Half of the doctors worked in a city and half of the doctors in a rural district. The proportion of male and female doctors equalled the ratio among GPs in general. In Netherlands, the doctors were selected from a telephone directory of GPs working in the same geographical area as the DEP participants. In Norway, the doctors were selected from the Medical Association’s list of GPs, but only doctors working outside the DEP intervention area were approached. The doctors were stratified by age and sex. In Sweden, the doctors were recruited from lists of GPs provided by the health authorities and the doctors were then selected on the basis of similarity with the doctors participating in the education project regarding age, sex and geographical location. Table 1 shows the sex distribution and the number of doctors that had to be contacted to recruit 20 respondents in each country.

The number of interviewees was decided to be twenty. There is, however, no definite answer to the question on the number of interviewees, although it has been suggested that, in qualitative studies, the number can often be kept low. In phenomenographic studies, the number of subjects has varied from about ten up to 100. In general, evidence shows that regardless of the number of subjects, only between two and six different ways of experiencing a phenomenon can usually be identified. The conclusion among phenomenographical (Sandberg, 1994) and other qualitative researchers (Dehlholm-Lambertsen & Maunsbach, 1997) has been that 20 participants is probably the optimal number in an interview study aiming at exploring ways of experiencing an aspect of reality. With this number, it is reasonably safe that the variation in views or conceptions will be captured, without collecting material that becomes too extensive and time consuming to analyse. This holds true, in particular, when there is a homogenous group in relation to the phenomena under study.

The interviews were semi-structured using an interview scheme (see Appendix A) that was developed jointly and tested in pilot interviews. The final interview schedule was agreed upon in an English version and was thereby translated to the national language, checked for accuracy, slightly revised, and tested anew. Five areas regarding asthma and its management were chosen for the analysis, after agreement between the principal investigators: (a) general view on asthma, (b) management of the asthmatic patient, (c) treatment options, (d) evaluation of effects, and (e) the patient’s role in asthma management. For each area an opening question was constructed which was framed to encourage a response reflecting the doctor’s thinking and ideas, not merely his/her knowledge. For each domain there were some defined probing aspects. These were to be used as a reminder for the interviewer in order to facilitate an exploration of more in-depth conceptions. The overall aim was to let the doctors speak freely within the respective domains of enquiry.

The interviews were conducted face-to-face, and in most cases in the doctor’s office. They were performed by the same interviewer in each country (with one exception) during 1994–1996: in Germany by a medical student (in 1996), in the Netherlands by a pharmacist (in 1995), in Norway by a general practitioner, and one interview by an anthropologist (in 1995), and in Sweden by a pharmacist (in 1994). All interviewers had participated in training sessions, and had performed pilot interviews. The interviews ranged in length from 30–90 min (mostly 45–60 min). They were tape-recorded and thereafter transcribed verbatim. These transcriptions were used for the analysis.

The following analytical procedure (Dahlgren & Fallsberg, 1991) was used in all countries. First the investigators had to familiarise with the material by carefully reading the transcribed interviews. The next step was a selection of the most significant statements to give a condensed but representative version of the dialogue concerning a certain phenomenon. These condensed expressions were then compared to find similarities that could justify that they were grouped together. The essence of the similarity within each group was then described in a preliminary version. Thereafter a new assessment was made for each individual doctor by again reviewing the full transcript in order to find support or disclaim for the preliminary descriptions of the various conceptions. Revisions were often necessary, before it was possible to finally formulate the description of each category, and to assign each individual doctor to the appropriate category. In the last step the obtained categories were compared regarding similarities and differences.

The analysis was performed separately, but in a similar way in the four countries. In each country three investigators were actively working with the material: in Germany a general practitioner, a medical student and a sociologist, in the Netherlands two pharmacists and one psychologist, in Norway a general practitioner, a pharmacist and an anthropologist, and in Sweden a
pharmacist, a general practitioner and an educationalist. The interviewers participated in the analysis in each country. Investigators from all countries took part in joint workshops led by one of the investigators (Dahlgren) with long experience in the field of phenomenography. The mostly used procedure during the analysis in each country, was to discuss suggested descriptions in-between the investigators, frequently in several rounds, until full agreement was reached about the final categorisations. This kind of ‘negotiated consensus’ is in line with the procedure that has been proposed by phenomenographic researchers (Bowden, 1996). In selected cases the final categorisations were used as a frame for a renewed assessment of the original interview material according to the descriptions. This last part of the procedure replaces the inter-judge reliability test that has sometimes been performed within the phenomenographic approach (Sandberg, 1995).

For the domain of management of asthma, the interview material contained many comments of a more ‘factual’ nature, not exhibiting ways of thinking that could be described as conceptions. Therefore, those parts of the material were analysed with a content oriented focus. Since the probing by the interviewers on more detailed matters could not be uniformly conducted in the semi-structured interviews, the absence of a statement or attitude regarding a certain issue may only imply that neither the interviewer nor the interviewee felt called upon to mention that aspect.

In order to harmonise the descriptions of categories, bilateral and quadrilateral discussions between the national groups of investigators were initiated to compare conceptions found in the different domains. During the analysis phase, contacts were also taken between the four country groups of investigators. The discussions were performed with the proposed categories from each country as a basis. During these discussions it was decided to present the results under the heading of three domains: (i) general view of the disease, (ii) the doctor–patient relationship, and (iii) management of asthma (treatment goals and evaluation of results). A consensus could be reached on the outlining of the domains, and on some common descriptions of the categories. As mentioned above, the domain of asthma management also included a content analysis of the doctors’ statements.

In the results section a few excerpts from relevant parts of the interviews are presented. It should be noted that such excerpts usually cannot include all the aspects of a description. Material from the whole interview has been used to describe the categories within one domain as relevant expressions can occur in any part of the interview. Within each domain, an individual doctor was only attributed to one category.

Results

The results are presented under the headings of each of the defined domains.

General view on asthma

In this domain we have arrived at common descriptions distinguishing three ways of experiencing asthma (Table 2):

(A) Asthma is primarily seen from the medical perspective, i.e., with (i) a biomedical or (ii) a psychological aetiology.

Asthma is described in biomedical terms focusing on how the organs are affected and the kind of symptoms and signs that usually occur. The aetiology may also be discussed, usually in terms of allergy or unknown factors. Some German doctors, however, stand out by explicitly stressing psychological factors as the primary concern when looking upon asthma in general. The need for treatment or the patient’s own experience of the disease are not prominent issues in this category.

I perceive asthma first and foremost as a hyper-reactive bronchial disease (…) the clinical side of it being general obstruction. The body contains certain reactive particles reacting to specific stimuli. (…) That’s how I see it. (Norwegian doctor)

(B) Asthma is primarily seen from a ‘global’ perspective, and thus as a situation to be handled from

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Table 2

<table>
<thead>
<tr>
<th>Asthma is viewed from</th>
<th>DE</th>
<th>NL</th>
<th>NO</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. A medical perspective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) With a biomedical aetiology</td>
<td>4</td>
<td>12</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>(b) With a psychological aetiology</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B. A ‘global’ perspective</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>C. The patient’s perspective</td>
<td>5</td>
<td>6</td>
<td>12</td>
<td>7</td>
</tr>
</tbody>
</table>

*DE = Germany, NL = Netherlands, NO = Norway, SE = Sweden.

That there are people who get their bronchi obstructed, and where, as I see it, the main reasons in the background are psychological factors, even when there’s an allergy (…) as children these people very often have overprotective mothers (…) and when they’ve become adults they often live in circumstances where they don’t want to share the air with other people. (German doctor)

(B) Asthma is primarily seen from a “global” perspective, and thus as a situation to be handled from

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a combination of individual, community health, social and environmental aspects.

Doctors holding this view do not talk about the ways the disease affects the body, but start more or less immediately talking about how asthma can be treated from a comprehensive view of how the disease is affected by social and environmental factors, and also about its impact on healthcare. This is most often seen from the perspective of the individual patient, but other factors may also be mentioned such as creating allergy-free environments or the possibility of reducing the cost for emergency treatment, etc.

Well, there is often allergy involved, and it [asthma] is increasing quite a lot, and that nowadays are good treatment options (...) and that it can be dangerous too if it is not treated right (...) and it is good economy from a societal point of view to treat the patients even if the drugs are expensive. (Swedish doctor)

(C) Asthma is primarily seen from the patient’s own experience and perspective.

The main difference from the other views is that these doctors give most attention to understanding how the disease affects the patient as an individual person and how the person experiences her/his illness. The doctors do not rely exclusively on the biomedical knowledge in their ways of relating to the management challenges. They express that they first of all need to know the patient’s own reactions and reflections as a person.

I do not think that you should trust the spirometry one hundred percent when making the diagnosis of asthma (...) this condition is reflected in how people function, how they experience it. (Norwegian doctor)

Our findings of the number of doctors with each of the conceptions (Table 2) indicate some differences when comparing the distribution within each country. All three views were found in three of the countries (only two categories were found in Norway), but whereas half of the Swedish doctors exhibited view B, more than half of the Dutch doctors exhibited view A and more than half of the Norwegian doctors exhibited view C, respectively. The German doctors showed a mixed pattern, although view A (including both aspects) had a slight predominance.

Psychological factors as part of the aetiology of asthma were in particular mentioned by some doctors in Germany and this was interpreted as an expression of these doctors’ ways of experiencing asthma in general. The same findings were not present in the other countries (nor for other German doctors), where the issue of influence of psychological factors, as it was brought up, was not interpreted as being part of the doctors’ general conceptions. However, some doctors in all countries expressed that they actively discussed psychological factors with their patients. Contrarily, in all countries, other doctors explicitly stated that they did not think that psychological factors were of any particular importance in the treatment of asthma.

**Doctor/patient relationship**

Within this domain we have found three categories that are common for all countries and one category that was only found in one country (Table 3).

(A) Authoritarian: The doctor takes full responsibility for the patient’s treatment, and the patient should follow the instructions. The doctor retains the knowledge.

The main feature of this view is the firm belief that the doctor is in control and in possession of power in terms of ‘having knowledge’. Knowledge is looked upon as pure information, which can be conveyed to the patient, who simply has to follow the instructions.

My task is to instruct the patient in taking her medications correctly (...) so she will know when she is getting better. When the patient comes to my office feeling bad, I do check her status by objective measurements. (Norwegian doctor)

Well, as a doctor I think of how to treat the patients, what measures you can take. Also try to get an idea to what extent they actually follow the prescription I’ve given them and if they take the medicine. I look

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Table 3

Views on the doctor–patient relationship among 20 general practitioners in each of four European countries

<table>
<thead>
<tr>
<th>Views on the doctor–patient relationship</th>
<th>DE</th>
<th>NL</th>
<th>NO</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Authoritarian: Knowledge and responsi-</td>
<td>8</td>
<td>5</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>bility is retained by the doctor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Teaching: Knowledge is shared to accomplish shared responsibility</td>
<td>5</td>
<td>7</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>C. Empowering: Knowledge is provided to enable the patient to take responsibility</td>
<td>7</td>
<td>8</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>D. Passivity: The GP lacks knowledge and feels uncertain or resigned</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

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3[Xxx] Explanatory note by the authors.
them into their eyes, sometimes even asthma patients don’t do what they should. (Swedish doctor)

(B) Teaching: The doctor sees the patient as a partner, who should take part of the responsibility for the treatment. Knowledge is shared with the patient to give the patient a possibility to learn more about asthma and its treatment.

The doctor shares his/her knowledge to make it possible for the patient to apply the knowledge in her/his own treatment. The factual knowledge is not emphasised as in view A, but rather the learning and applying procedures which may lead to the patient’s own mastering of the treatment.

I try to instruct them that they should do much of this themselves, that’s the goal for them, to manage on their own to increase their inhaled steroids. I usually tell them to double the dose first and if that doesn’t help to triple the original dose. Yes, the role of the patient is to become an expert on his or her own disease. To learn to recognise the danger signals and control the steroids themselves to use the lowest possible dose to remain free of symptoms objectively and subjectively and I think that is very important for them to learn themselves and what to avoid so they don’t get their attacks and so on. (Swedish doctor)

(C) Empowering: The doctor enables the patient to gain knowledge and understanding about the disease and its management, and the patient has to take an own responsibility for the treatment.

In this view the perspective has been even more focused on the patient’s role. The patient should manage the disease by her/himself through an understanding of the different aspects related to self-management.

I simply let them [the patients] try. In that way it is possible for them to make their own experiences. And, it is often the case that the patient has already got quite a good understanding and you only have to let them try out all possibilities. You are working cooperatively, you know. And when the patient comes with new ideas, you shouldn’t reject them, but accept them first and consider ‘Perhaps he is right’ and then you can consider again if it is a good thing or not. (German doctor)

I presume that my patients surely can get on with it when I have given them instructions and advice during the first meeting. (Dutch doctor)

(D) Passivity: The doctor is uncertain about the treatment situation for asthma, and does not take an active role.

In this view clear elements of a more structured approach to the doctor’s or patient’s role in the treatment of asthma, could not be found. Instead, the doctor appeared to feel inadequate and uncertain about the correct treatment, because of perceived lack of knowledge and/or resignation as to treatment outcomes in asthma management.

I do sometimes refuse making the diagnosis asthma . . . at least I wait and see, maybe the symptoms will pass away when this winter is over and summer is here . . . ) Maybe the fact is that I do not treat the patient adequately enough, and that I am too passive. (Norwegian doctor)

The last category could only be found among the Norwegian doctors, but the three other views were more or less evenly distributed within all four countries.

Management of asthma patients

For two aspects of asthma management sufficiently well described conceptions were identified: the doctors’ general treatment goals, and the doctors’ appraisal of the pharmaceutical treatment of asthma (Tables 4 and 5).

Treatment goals

(A) To get the patient symptom-free and a to achieve normalisation of objective signs, so that the patient can lead a normal life.

(B) To accomplish continuous treatment of the inflammatory disease to avoid long-term complications.

(C) To get the patient to accept the disease and learn how to handle it.

(D) To treat asthma without pharmaceuticals.

It is important to note that we have categorised the conceptions according to the main goals expressed by the doctors. Thus, some doctors may share part of the

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Views on treatment goals in asthma management among 20 general practitioners in each of four European countriesa</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. The patient should be symptom free</td>
<td>DE</td>
</tr>
<tr>
<td>B. Continuous treatment of the inflammatory disease</td>
<td>3</td>
</tr>
<tr>
<td>C. The patient has to accept the disease and learn how to manage it</td>
<td>7</td>
</tr>
<tr>
<td>D. To treat without pharmaceuticals</td>
<td>2</td>
</tr>
</tbody>
</table>

aDE=Germany, NL=Netherlands, NO=Norway, SE=Sweden.
views expressed in another category but not as a main goal. The doctors’ concern in Netherlands and in Norway, and to a lesser extent in Germany, was predominantly that the patients should become symptom-free. The Swedish doctors, to a greater extent, emphasised the importance of treating the inflammatory disease through continuous use of inhalation steroids, even if the patient was more or less symptom-free. Some of the doctors in Germany and Norway expressed a view that asthma patients should accept their disease and learn how to handle it. This way of experiencing treatment goals was not observed in Netherlands or in Sweden. In Germany the main treatment goal of a few doctors was to avoid treatment with pharmaceuticals. They felt that patients should live without continuously taking pharmaceuticals, and that other treatment solutions had to be sought in order to enable asthma patients to live a ‘drug-free’ life.

The value of pharmaceutical treatment of asthma

(A) The doctor has confidence in the effectiveness of the pharmaceutical treatment of asthma.

(B) The doctor is concerned about limitations of treatment possibilities.

(C) The doctor is critical to the possibilities of achieving treatment goals with pharmaceuticals.

In view A the doctors were comfortable with the treatment options and did not express any insecurity regarding limitations or long-term effects of conventional medical treatment. The difference between a view in line with the B category and one in line with the C category is that the doctor who held a B view was concerned with the limitation of existing drugs (and may hope for better ones to be produced), while the doctor holding the C view was fundamentally sceptical with regard to the possibilities to achieve good treatment effects with pharmaceuticals alone. German doctors were the only ones that questioned the concept of treating asthma with pharmaceuticals, and expressed a view that favours alternative treatments (e.g., homeopathic remedies, or psychotherapy), in order to heal the disease.

Important issues regarding asthma management

As an addition to the categories of conceptions described in the previous paragraphs, it was possible to discern some important issues that were explicitly brought up by the doctors regarding various aspects of asthma management. An overview of these issues is shown in Table 6. It should be noted, that, as specific questions were often not asked, the number of doctors expressing certain attitudes or opinions do not necessarily reflect all interviewed doctors in the specific country. The table shows the number of doctors for whom the issues were important enough to be brought up during the interview.

More Swedish doctors mentioned the long-term benefits of drug treatment (mainly inhaled corticosteroids) to prevent lung complications to a higher extent, than did the doctors in the other countries. Some of the doctors in Germany and Norway expressed that they were hesitant to introduce continuous treatment with inhaled corticosteroids. The doctors in the Netherlands and in Sweden were more often expressing a liberal attitude to prescribing oral corticosteroids for treating exacerbations than the doctors in Germany and Norway. Doctors in all countries considered liberal prescribing of antibiotics part of their practice. The prescribing of theophylline as a treatment of exacerbations was only mentioned by (almost all) German doctors.

Patients’ anticipated fears of steroids (both inhaled and oral) seemed to be more recognised by doctors in Germany, Norway and Sweden than in Netherlands. Side effects of anti-asthmatic drugs were only mentioned by doctors in all four countries in relation to nor being influential on their prescribing. The Dutch and the Norwegian doctors seemed to be more cautious about an anticipated low adherence to treatment regimens, compared to the German and Swedish doctors. In all countries there were some doctors, who seemed to be slightly more observant on discontinuation of therapy as a problematic issue in the treatment of asthma.

Environmental interventions in the treatment of asthma were explicitly discussed by all doctors in Sweden and Netherlands, and also among more than half of the doctors in the two other countries. An awareness of the importance of physiotherapy was more often mentioned among the doctors in Germany and Sweden than in the two other countries. Some of the doctors in Germany seemed to be more interested in alternative medicine, by, e.g., using homeopathic medicines, which was not mentioned at all by the doctors in the other countries. A few German doctors indicated that they referred patients for psychotherapeutic counselling, which was also mentioned by two doctors in Norway, but not in Sweden or Netherlands. Some Swedish and Norwegian doctors

Table 5
Views on the value of pharmaceutical treatment of asthma among 20 general practitioners in each of four European countries*

<table>
<thead>
<tr>
<th></th>
<th>DE</th>
<th>NL</th>
<th>NO</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Confidence in anti-asthmatic drugs</td>
<td>13</td>
<td>15</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>B. Sub-optimal treatment possibilities</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>C. Critical to pharmaceutical treatment</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*DE = Germany, NL = Netherlands, NO = Norway, SE = Sweden.
suggested clinics for patient education regarding the patients’ own management of the disease — led by specially educated nurses — as an important part of the treatment options.

Doctors in all countries expressed a more or less liberal attitude regarding self-adjustment of medication. A clear gradient could be seen from those who allowed no adjustment at all, over those allowing adjustments only regarding beta-2-stimulants, to those doctors who encouraged the patients to monitor and change their own medication with inhaled corticosteroids, and also in some cases allowed self-administered treatment of exacerbations through oral corticosteroids and/or antibiotics prescribed in advance.

Most of the doctors in all countries reported using PEF (peak expiratory flow) meters in their surgeries (in Germany usually spirometers), although a few doctors explicitly mentioned that they thought this had no relevance at all. Doctors in all countries seemed to be prone to encourage patients to use PEF meters for monitoring their disease at home. Doctors exhibiting a lower encouragement of home monitoring, in some cases stated that this was due to an idea that there is a bad correlation between PEF values and clinical symptoms. Regarding referral practices, the doctors in Netherlands and Norway seemed to be more appreciative of asking for a specialist’s opinion, than the doctors in Sweden and Germany.

Discussion

In this study in four European countries we have found both similarities and differences regarding general practitioners’ ways of experiencing asthma as a disease, their views on the doctor–patient relationship, and their

<table>
<thead>
<tr>
<th>Importance</th>
<th>DE</th>
<th>NL</th>
<th>NO</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug treatment</td>
<td>Prevents lung complications</td>
<td>5</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Inhalation steroids in early phase</td>
<td>8</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>High threshold to start inhaled steroids</td>
<td>6</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Treatment of exacerbations</td>
<td>Liberal prescribing of oral corticosteroids</td>
<td>5</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Liberal prescribing of antibiotics</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Liberal prescribing of theophyllines</td>
<td>18</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Side effects of drugs</td>
<td>Not important for drug choice</td>
<td>10</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Patients exhibit fear of steroids</td>
<td>13</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Adherence to medication</td>
<td>High confidence in adherence</td>
<td>9</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Low confidence in adherence</td>
<td>4</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Awareness of discontinuation</td>
<td>13</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Other treatment options</td>
<td>Environmental (smoking, pets, etc.)</td>
<td>15</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Physiotherapy</td>
<td>11</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Alternative medicine</td>
<td>5</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Asthma nurse clinic/patient education</td>
<td>0</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Psychotherapeutic counselling</td>
<td>6</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Self-management</td>
<td>Not allowed to adjust medication on their own</td>
<td>3</td>
<td>2</td>
<td>0</td>
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<tr>
<td></td>
<td>May only adjust inhalation bronchodilators</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>May also adjust inhalation corticosteroids</td>
<td>3</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Oral corticosteroids/antibiotics at home</td>
<td>4</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Encouraged but level not explicit</td>
<td>8</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Use of PEF meter for evaluation of effects</td>
<td>In the surgery (incl. spirometers)</td>
<td>18</td>
<td>15</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>At home</td>
<td>15</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Referral policy</td>
<td>Low threshold for referring to lung specialist</td>
<td>9</td>
<td>17</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Restrictive, only in the most severe cases</td>
<td>7</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

*DE = Germany, NL = Netherlands, NO = Norway, SE = Sweden.*
views and attitudes regarding the management of asthma. Some remarkably different conceptions and views were observed between countries, but also within a single country, different views were fairly common. This has consequences for medical practice and educational activities. Before discussing the results, it is important to note that the reason for mentioning numbers of doctors exhibiting the different ways of experiencing asthma and asthma management, is to give an indication of the occurrence of a certain view in each of the countries. However, any generalisability of our findings is conceptual rather than numerical (Green & Britten, 1998). The fact that some categories did not exist at all in a country indicates that they are probably uncommon in the general population of GPs.

Looking at the general view on asthma, it is noteworthy that some of the German doctors exclusively emphasised that asthma has a psychological aetiology, which can be treated by psychotherapy. This is not mentioned in the evidence-based guidelines, and appears to be a reflection of another tradition in the medical field regarding the origin of asthma (Fahrig, 1991). Conceptions regarding the treatment goals and the value of pharmaceutical treatment are also somewhat different in Germany. The view that the main goal is to treat asthma without pharmaceuticals, as well as apparent reservations towards pharmaceutical treatment have only been expressed by some of the German doctors. It seems that this is related to a more positive attitude towards the use of alternative medicine in Germany. In the other countries, the confidence in the pharmaceutical treatment of asthma is high. The doctors do not see side effects of drugs as highly relevant for the drug choice. In most countries, however, GPs believe that their patients do have fears towards using corticosteroids. In Germany and Norway, where this anticipated fear is combined with treatment goals which are not dominantly focussing on the inflammatory nature of asthma, this seems to result in a more restrictive attitude towards prescribing both inhalation steroids for maintenance treatment and oral corticosteroids for exacerbations. In most countries, there are quite a few doctors whose main treatment goal is to relieve symptoms. When this view is combined with the idea held by some GPs that symptoms and PEF values are not highly correlated, it explains their reluctance to actually using peak-flow meters for evaluating the effect of asthma treatment. This seems to be in line with the finding in the USA that primary care physicians want to focus more on symptoms than on pulmonary function, and feel that peak flow monitoring is only to be recommended for selected patients (Picken, Greenfield, Teres, Hirway, & Landis, 1998).

The conceptions observed in all countries regarding the doctor–patient relationship fit well in the conceptual framework for decision-making in the physician–patient encounter proposed by Charles, Gafni and Whelan (1997, 1999). Their three models: the paternalistic, the shared treatment and the informed model, correspond with our first three categories: the authoritarian, the teaching and the empowering category. In our study, the distribution of the categories was strikingly similar in the different countries, suggesting that the relationships between doctors and patients are essentially the same in these different settings. In all countries, a substantial number of doctor’s hold an authoritarian view which seems to disagree with the active role for the patient advocated in the guidelines for asthma management. Patient centredness has been described as a prerequisite for a good outcome of the clinical consultation (Arborelius & Bremer, 1992; Henbest & Fersen, 1992; Lassen, 1991), and also for managing a chronic disease, such as asthma, an active partnership with patients is considered essential (Patel, Axen, Bartling, & Guarderas, 1997). Giving more control to the patients in combination with a team approach has been shown to improve patient outcome (Partridge, 1995). Patients want to take initiatives to control their symptoms and become masters of the disease (Adams, Pill, & Jones, 1997; Hansson Scherman, 1994). In a British study on asthma patients and their GPs, it was shown that GPs do not see this as a primary objective (St Claire et al., 1996). Our results indicate that this discrepancy between the views of GPs and their patients might be a universal problem.

The knowledge and understanding of existing views in the GP population has implications when designing and conducting continuing medical education. Awareness of sometimes diametrically different views among doctors regarding fundamental issues, which have been found also regarding other diseases (Dahlgren, Diwan, Tomson, & Wahlström, 1992), calls upon diversity in educational activities. When there exist conceptions that are opposed to the actual content of an educational message, (e.g., German doctors with a strong belief in the psychological aetiology or ‘authoritarian’ GPs holding the view that the doctor has the main responsibility for the treatment) these issues need to be addressed in order to get the full attention and acceptance from doctors holding these views. Doctors exhibiting a critical attitude to pharmaceutical treatment should be approached in a different way than GPs who feel confident about the benefits of anti-asthmatic drugs. Although a certain view may only be exhibited by a minority group of GPs in a country, it may still be the most important group to approach during an educational intervention as it could constitute a group where a change would have the most important impact.

Conclusively, the existence of qualitatively different views among GPs on asthma and asthma management both within and between countries calls for diverse approaches when trying to implement evidence based
guidelines. It cannot be expected that all doctors in a country, and even less that all doctors in four different countries would benefit from the same educational material, or react in the same way to such an intervention. With an understanding of the different views, some of the obstacles may be addressed and overcome.

Acknowledgements

We want to thank all the participating doctors for sharing their experiences and views on asthma management. We also want to express our appreciation of the contributions from researchers outside the DEP group working with the respective national materials in Netherlands: J. Heyink, in Sweden: G. Dall’Alba, in Norway: A. Leseth, and in Germany: J. Hinrichs and M. Schroeter. The project was financially supported by EU BIOMED I Programme (contract BMH1-CT93-1377). Specific parts of the project were supported by the Department of Health, Well-being and Sports in Netherlands, the Research Fund for Social Pharmacy and Health Economics of the Apoteksbolaget in Sweden, the Norwegian Medical Association, the Norwegian Research Council, and the Norwegian Association of Proprietor Pharmacists, and the German division of Glaxo Wellcome and Lilly Deutschland GmbH.

Appendix A

Interview schedule (master version in English)

General aspects
1. What comes to your mind when you think of asthma?
   (1. alternative or addition: What is asthma for you?)
   Optional:
   1 b. What are your thoughts about why some people get asthma?
   Patient encounter
2. What do you think is important to discuss and examine when a patient with established asthma consults you?
   evaluation of symptoms and signs
   environmental factors (smoking, allergens, airway irritants, etc.)
   psychological factors
   issues brought up by the patient
   Treatment
3. What are your objectives when treating asthma?
4. How do you look upon different options for treating asthma?
   non-pharmacological treatment
   environmental modification
   pharmacological treatment
   first-line choice
   effects/adverse effects
   cost
   treatment of exacerbations
   need/demand for antibiotics
5. What do you tell your patient about his/her asthma medication?
   Evaluation of effects
6. What do you think is important in evaluating the effects of your treatment of asthma patients?
   symptoms
   coping with daily activities
   PEF (peak expiratory flow) measurements
   at home
   during the consultation
   compliance
   inhalation technique
   reasons why the doctor changes treatment
   Patient role
7. What do you think about the patient’s role in the treatment of asthma?
   self monitoring
   self-adjustment of medication
   awareness
   responsibility
   educational aspects (partner or pupil?)
   Information and management
8. What helps you keep up-to-date regarding asthma management?
   most important?
   attitudes towards guidelines
9. Do you encounter/experience any difficulties in the management of asthma patients?
   Final
10. Is there anything more you would like to say about the management of asthma in general practice?

References

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