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Views on respiratory tract symptoms and antibiotics of Dutch general practitioners, practice staff and patients

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Abstract

Objectives: To explore views on respiratory tract symptoms (cough, sore throat and earache) and antibiotics of GPs, practice staff, and patients.

Methods: In a nationwide study, 181 GPs, 204 practice staff members and 1250 patients from 90 practices participated by answering 14 items relating to views on respiratory tract symptoms and antibiotics in a written questionnaire. Differences in means were compared.

Results: Patients more than GPs endorsed the seriousness of respiratory tract symptoms, the need to consult a GP, the need to prescribe antibiotics, and the ability of antibiotics to speed up recovery. GPs were more than patients convinced of the self-limiting character of respiratory tract symptoms and of the fact that antibiotics have side effects. Practice staff took a middle ground in most of these views.

Conclusions: Differences between GPs, practice staff and patients must be taken into account when exploring patients' complaints and advising on treatment. Education and knowledge programmes for practice staff might be advocated.

Keywords: Views; Respiratory tract symptoms; Antibiotics; General practitioners; Practice staff; Patients

1. Introduction

Respiratory tract symptoms such as cough, sore throat and earache are the most common reasons why patients consult a general practitioner (GP) [1]. Most of these symptoms are caused by viral infections, are self-limiting, and require only symptomatic over-the-counter medication to relieve the symptoms, while antibiotics shorten the duration of these symptoms only modestly, if at all [2–5]. Nevertheless, patients often seek medical advice, resulting in antibiotic prescription. Antimicrobial agents are used too often, even in the Netherlands [6–9], where antibiotic prescribing is low compared with other countries [10,11]. Negative consequences of this over-consumption are unnecessary costs, risk of side effects, unnecessary utilisation of health services, and development of antimicrobial resistance [8,12–14].

In general, patients' views differ from those of GPs [15–19]. In case of respiratory tract symptoms, GPs tend to believe more than patients that these symptoms are self-limiting and not serious [17], while patients are not aware of the viral aetiology and overestimate effectiveness of antibiotics [20]. Patients' views and especially GPs' perception of patients' views towards medication seem to have a major influence on GPs' management of respiratory tract symptoms, especially regarding prescribing antibiotics [21–25]. Cockburn and Pit showed in an Australian study that patients who expected to receive medication were nearly three times more likely to actually receive medication, and GPs who perceived that patients expected to receive medication prescribed 10 times more than those who did not perceive [26].

Patients' views on seriousness, time-line, curability, and controllability have been shown to play a role in patients'

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coping behaviour relating to their illness, and therefore, in the doctor–patient relationship in patients with chronic diseases [27–30]. Probably, this is also the case in self-limiting illnesses; mutual misunderstanding and ignorance or disagreement about views on health and illness may negatively influence patient–doctor relationship, patient compliance regarding advice and treatment, and patient satisfaction [21,31,32]. Therefore, exploration of these dimensions of patient's views is needed for optimal patient education and treatment of patients with self-limiting illnesses as respiratory tract symptoms as well as chronic diseases.

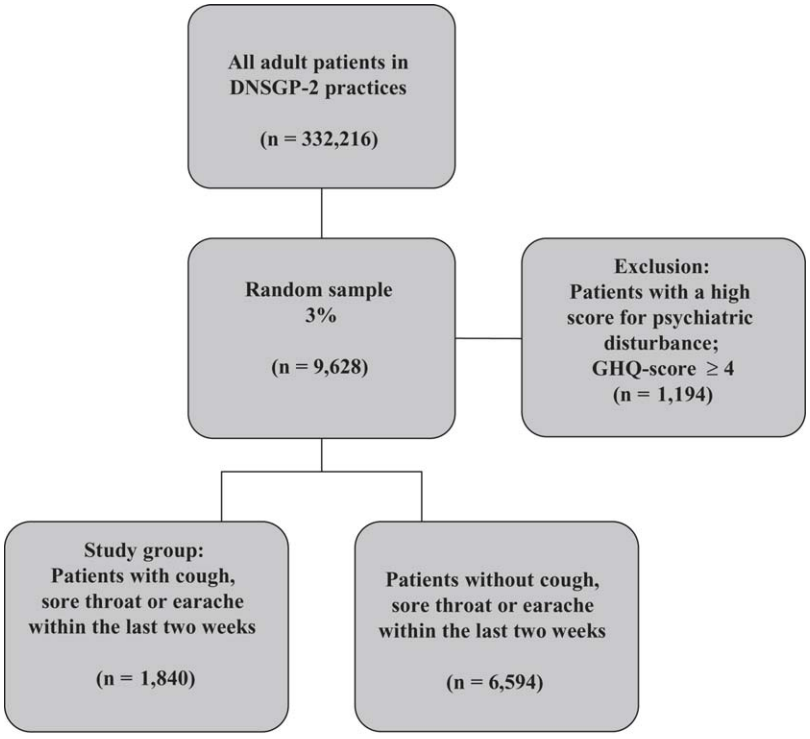
Mutual misunderstanding and disagreement may also exist between patients and nurses or practice staff (paramedical qualified for nursing, administrative and receptionist tasks). In the Netherlands, practice staff have a growing task in intake and triage in general practice, similar to practice nurses and physician assistants in other countries [33,34]. Therefore, accordance in views between GPs and practice staff is important. Views of practice staff might influence self-medication and the threshold to consult a GP on the one hand, and patients' satisfaction and compliance on the other hand. However, there are no studies done so far to explore practice staff views on this topic.

This study aimed to explore views on respiratory tract symptoms (cough, sore throat and earache) and antibiotics of GPs, practice staff, and patients in a nation-wide study.

2. Methods

2.1. GPs, practice staff, and patients

The data used in this study originate from the Second Dutch National Survey of General Practice (DNSGP-2), which has been carried out by the Netherlands Institute for Health Services Research (NIVEL) in 2001 [35]. All GPs ($n = 195$) and practice staff members ($n = 210$) from 104 practices were invited to complete a questionnaire. In addition a random sample of all adult patients in DNSGP-2 practices was selected. Those adults who recently (i.e. within the last two weeks) suffered from cough, sore throat or earache (see flow chart) were invited to complete a questionnaire as well. Patients with a high score for psychiatric disturbance (GHQ-12-score of four items or more) were excluded because of participation in a study on mental illnesses [36].



Flow chart. Selection of the study group of 1,840 adults invited to complete the questionnaire from a random sample of 3% of all patients of the DSNGP-2 practices

2.2. Questionnaire

The questionnaire completed by GPs, practice staff and patients contained 14 items used in earlier studies (see Appendix A) about views on respiratory tract symptoms and antibiotics, based on dimensions shown to be relevant in coping with chronic diseases [17,37]. These items referred to six views: perceived seriousness (three items), self-limiting properties (three items), need to consult a GP (three items), need to prescribe antibiotics (three items), effectiveness of antibiotics (one item), all in case of respiratory tract symptoms, and side effects of antibiotics (one item). The answers were rated on a Likert-type five-point-scale (rating from 1, strongly disagree to 5, strongly agree).

2.3. Data processing and analysis

Firstly, for each participant, means were calculated for those views containing three items combined with the intercorrelation between items (Cronbach's alpha). Next, means scores were calculated for GPs, practice staff and patients. These means were compared for all six views with a high score meaning a high endorsement and a low score a low endorsement of that view. Differences were tested by a Kruskal–Wallis-test (significance level: $p < .05$) [38]. Data analysis was performed with the Statistical Package for Social Sciences for Windows (SPPS 12.0.1).

3. Results

Completed questionnaires were returned by 181 GPs (response 93%; Table 1) and 204 practice staff members (response 97%). There were no differences between responding and non-responding GPs and practice staff regarding age, gender, and years of practice (Table 1). A complete questionnaire was returned by 1250 out of all 1840 adult patients recently suffering from cough, sore throat or earache (68%). There were no differences between responders and non-responders regarding age, gender, type of insurance, chronic respiratory co-morbidity and diabetes mellitus or cardiovascular disease as co-morbidity, however, non-responding patients were more likely to smoke than responders (43% versus 34%; difference, 9%; 95% CI, 5–14%).

Patients differed from GPs in all views (Table 2). Patients considered respiratory tract symptoms more serious and less self-limiting and they thought there was more need for antibiotics in case of respiratory tract symptoms. They were more convinced about the effectiveness of antibiotics than GPs and estimated side effects of antibiotics as less important.

Practice staff differed in almost all views from both patients and GPs. They adopted a middle ground between patients and GPs in views concerning seriousness, self-limiting character of respiratory tract symptoms, need to prescribe antibiotics, and effectiveness of antibiotics. Surprisingly, practice staff reported an even greater need to consult a GP than both patients and GPs. Practice staff were as concerned about side effects of antibiotics as GPs.

4. Discussion and conclusion

4.1. Conclusion

In this nation-wide study in the Netherlands, patients endorsed more than GPs the seriousness of respiratory tract symptoms, the need to consult a GP for these symptoms, the need to prescribe antibiotics for them, and the ability of antibiotics to speed up recovery. GPs were more convinced than patients of the self-limiting character of respiratory tract symptoms and of the fact that antibiotics have side effects. Practice staff took a middle ground in most of these views.

4.2. Strength and limitations of the study

The participation of GPs, practice staff, and patients was high as compared to other surveys. There were no differences between participants and non-participants, except that, for patients, less participants than non-participants smoked. Because smoking behaviour was not correlated with patients' views, we assume that this difference did not bias our results.

Table 1
Demographic characteristics of general practitioners (GPs), practice staff and patients (study groups and responders)

	GPs		Practice staff		Patients	
	Study group ($n = 195$)	Responders ($n = 181$)	Study group ($n = 210$)	Responders ($n = 204$)	Study group ($n = 1840$)	Responders ($n = 1250$)
Age (mean and S.D.)	46.7 (6.6)	47.1 (6.4)	37.9 (9.9)	37.9 (10.0)	47.3 (17.8)	47.1 (17.2)
Gender (%female)	27	26	100	100	58	58
Practising years (mean and S.D.)	17.7 (8.7)	18.2 (8.7)	10.6 (7.3)	10.6 (7.4)		
Smokers (%)					37	34
Health insurance (%)					67	66
Chronic respiratory co-morbidity (%)					13	13
DM and/or cardiovascular disease (%)					11	10

Table 2
Views of general practitioners (GPs), practice staff, and patients about respiratory tract symptoms and antibiotics (AB) (Cronbach's α; mean and S.D.)[a]

Views on respiratory tract symptoms and AB	GPs ($n = 181$)		Practice staff ($n = 204$)		Patients ($n = 1250$)	
	Mean (S.D.)	α	Mean (S.D.)	α	Mean (S.D.)	α
Seriousness[b]	2.0 (0.8)	.85	3.0 (1.0)	.93	3.2 (1.0)	.78
Self-limiting character[b]	4.3 (0.6)	.59	3.9 (0.8)	.64	3.3 (0.7)	.62
Need to consult a GP[b]	3.6 (0.8)	.52	4.2 (0.7)	.48	3.8 (0.6)	.63
Need to prescribe AB[b]	1.7 (0.7)	.86	2.5 (1.0)	.89	3.1 (1.0)	.82
Effectiveness of AB[b]	1.9 (0.9)		2.4 (1.2)		3.6 (0.9)	
Side effects of AB[c]	3.8 (1.0)		3.8 (1.0)		3.1 (1.0)	

[a] The answers were ranged as follows: 1, totally disagree to 5, totally agree.
[b] Difference between GPs and practice staff, GPs and patients, and practice staff and patients (Kruskal–Wallis-test; $p < .01$).
[c] Difference between GPs and patients, and practice staff and patients (Kruskal–Wallis-test; $p < .01$), but *not* between GPs and practice staff ($p = .25$).

We included only patients who had recently cough, sore throat or earache, because these are the patients who are found in GP practices and, as a result, the practice implications would be better grounded. Patients with a high risk of psychiatric disturbance were excluded. There are indications that these patients perceive symptoms more serious and perceive greater need to consult a GP than patients with a low risk [39]. So, the differences between patients on the one hand, and GPs and practice staff on the other hand, we assessed in our study might be slightly underestimated.

4.3. Comparison with the existing literature

In an earlier study among small groups of patients and GPs, we showed corresponding differences in views between GPs and patients relating (acute) respiratory tract symptoms and antibiotics [17]. Our findings agree with those of Varonen and Saino, who also reported also that patients had less confidence in natural course of sinusitis than physicians [18].

Our findings are also in line with studies in which nurses in- and outside hospitals have been found to be in a middle position between physicians' and patients' views on health and illness [16,40].

Patients' views in this study are similar with those measured in Dutch respondents in an international study carried out among patients in the Netherlands, UK and Belgium, countries with a low, moderate, and high outpatient antibiotic use [41]. In that study, we found that Belgian responders perceived a higher need to consult a GP in case of respiratory tract symptoms, and perceived these symptoms as more serious and less self-limiting than responders in UK and the Netherlands. However, they did not differ in views on effectiveness and side effects of antibiotics. Therefore, we think that our findings are also relevant for other settings outside the Netherlands.

4.4. Practice implications

Differences in views between patients with recent experience with respiratory tract symptoms and GPs underline the importance to explore patients' views about respiratory tract symptoms and antibiotics in individual cases to avoid misperception, to make explanation more effective and to improve shared decision making [42–44] and so decreasing over-prescribing of antibiotics [32].

Practice staff was taking a middle ground between GPs and patients in most dimensions, and almost all of their views differed significantly from GPs. Intake and triage by paramedic personnel (practice staff, practice nurses, physician assistants) is increasingly important in general practice [33,34]. More agreement between GPs' and practice staff views is, therefore, desirable in order to ensure uniform disease management within practices. Quality assurance programs should target consensus and mutual understanding between the different health professionals in primary care concerning assessment of respiratory symptoms and indications for antibiotic treatment.

Appendix A. Overview of items used in the questionnaire according to views on respiratory tract symptoms and antibiotics*

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Perceived seriousness					
A cough, together with a raised temperature suggests a serious infection					
A sore throat, together with a raised temperature suggests a serious infection					
A child with a raised temperature and earache suggests a serious infection					
Perceived self-limiting character					
Cough almost always gets better without treatment within two weeks					
Sore throat almost always gets better without treatment within one week					
Earache almost always gets better without treatment within two days					
Need to consult a GP					
If a cough lasts longer than two weeks, it is advisable to see a doctor					
If sore throat lasts longer than one week, it is advisable to see a doctor					
If earache lasts longer than two days, it is advisable to see a doctor					
Need of antibiotics					
You need treatment with antibiotics if you have both a cough and a raised temperature					
You need treatment with antibiotics if you have both a sore throat and a raised temperature					
A child needs treatment with antibiotics if it has both earache and a raised temperature					
Effectiveness of antibiotics					
Antibiotics speed recovery from symptoms as cough, sore throat and earache					
Side effects of antibiotics					
Antibiotics have many side effects					

* items were included in the questionnaire in a random order

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