

ORIGINAL ARTICLE

## The association between patient shortage and patient satisfaction with general practitioners

HILDE LURÅS

Helse Øst Health Services Research Centre, Akershus University Hospital, Norway

### Abstract

**Objective.** The aim of the study was to explore whether or not the influx of patients to a GP's practice is associated with satisfaction with the GP. **Design.** Persons in the Norwegian Living Condition Survey answered a questionnaire on satisfaction with their GP. The data on satisfaction were merged with registered information on the GPs and the GPs' patient lists from the National Insurance Administration, with registered information on the sample's sociodemographic background, and on their resident municipality from Statistics Norway. **Setting.** A representative sample of 2326 persons answered the questionnaire. This constituted persons in the survey who had visited their GP during the last six months. **Main outcome measure.** Satisfaction with the GP's interpersonal skills, the GP's medical skills, the GP's use of time, general accessibility to the GP, and the GP's role as a gatekeeper. **Results.** Persons listed with a GP who experience patient shortage were less satisfied than others along four dimensions of satisfaction: the GP's interpersonal skills, the GP's medical skills, the GP's referral practices, and the consultation lengths the GP offered. The GP's age and gender, characteristics of the patient, and characteristics of the organization of primary care had minor influence. **Conclusion.** Whether or not a GP experiences patient shortage is associated with patient satisfaction. Whether or not the lower patient satisfaction is a result of patient shortage or vice versa is not known.

**Key Words:** Family practice, general practitioner, GP characteristics, list patient system, patient shortage, patient satisfaction

Due to the introduction of the regular general practitioner scheme in Norway the population was given the opportunity to rank their three most preferred general practitioners (GPs) on an entry form [1]. After an allocation process<sup>1</sup> based on these rankings, a considerable share of the GPs had fewer people listed than they would have preferred [2]. Empirical analyses show that compared with GPs who achieved their preferred lists, the GPs experiencing patient shortage, on average, provided more and longer consultations and more services per consultation to persons on their lists [3,4]. Accordingly, they offered a shorter waiting time to get an appointment [5]. In a situation where the population complains about accessibility to primary healthcare [6], an interesting question is whether or not a short wait and a service-intensive practice profile imply more satisfied patients on the list.

The aim of this study was to find out whether there is a relationship between satisfaction with a

Little is known about the mechanisms and reasoning behind choice of general practitioners.

- Patients listed with GPs experiencing patient shortage are less satisfied with the GP's interpersonal skills, medical skills, referral practices, and consultation lengths.
- Patients assigned to their first-choice GP are more satisfied with the GP's interpersonal skills, medical skills, and referral practices.

doctor and whether or not the doctor was experiencing patient shortage. Earlier analyses, based on registered data from the allocation process, indicate a relation between patient satisfaction and the number of persons listed with a GP [2]. In the current study we explore this further by asking a representative sample of the population questions

Correspondence: Hilde Lurås, Helse Øst Health Services Research Centre, Akershus University Hospital, PO Box 95, NO-1478 Lørenskog, Norway. E-mail: hilde.luras@ahus.no

(Received 22 August 2006; accepted 13 February 2007)

about satisfaction with their assigned GP. Because this survey's data are merged with registered information on the individual's regular GP and his/her patient lists, our data make it possible to explore this issue in a thorough way.

### Materials and methods

The Norwegian Living Conditions Survey was established by Statistics Norway in 1997. The 2002 Survey consisted of 5000 respondents aged 16 and older. The sample was representative with regard to age, gender, marital status, and geographical region. An interview was obtained with 3588 persons. Women comprised 52% of the sample and the average age was 45 years. The questions on patient satisfaction were only asked persons who had visited their assigned GP after the reform. This constituted a net sample of 2326 persons.

Data from the Living Conditions Survey were merged with registered information on the sample's sociodemographic background and their resident

municipality from Statistics Norway (SN) registries and with registered information on each person's assigned GP from the National Insurance Administration (NIA). The Data Inspectorate approved the merging of data from different sources.

We included five statements on satisfaction with the GP in the questionnaire (Table I). The claims captured how the patient perceived the relationship with the GP, the GP's medical skills, the GP's use of time during the consultation, the waiting time to get an appointment, and the GP's role as a gatekeeper [7–9]. Because we found it important to explore how the population considered the different aspects of satisfaction with the GP, we decided not to construct a satisfaction index of the five indicators.

Prior to the reform the health authorities asked each GP to specify the number of persons they would like to have on their lists. We measured whether or not a GP experienced patient shortage by computing an indicator that equalled one if he/she lacked more than 100 persons to achieve his/her stated list size, and another indicator that equalled one if he/she was

Table I. Statements on different aspects of satisfaction with the GP.

Statements	Answering categories	Frequency (n)
Interpersonal skills: The doctor takes my questions and problems seriously	Fully agree	83.8% (1949)
	Agree for the most part	10.6% (247)
	Neither agree nor disagree	2.2% (52)
	Disagree somewhat	0.9% (47)
	Disagree in full	0.4% (20)
	Don't know	0.2% (11)
Medical skills: I have full confidence in the treatment my doctor prescribes	Fully agree	78.8% (1832)
	Agree for the most part	13.8% (320)
	Neither agree nor disagree	2.8% (64)
	Disagree somewhat	3.3% (76)
	Disagree in full	1.1% (26)
	Don't know	0.3% (8)
Referral practice: I can get a referral to a specialist if it is necessary	Fully agree	76.8% (1786)
	Agree for the most part	7.3% (169)
	Neither agree nor disagree	8.1% (188)
	Disagree somewhat	1.2% (27)
	Disagree in full	2.0% (46)
	Don't know	4.7% (109)
	Will not answer	0.0% (1)
Consultation length: The doctor does not give me enough time	Fully agree	11.1% (259)
	Agree for the most part	12.9% (301)
	Neither agree nor disagree	2.6% (60)
	Disagree somewhat	14.3% (333)
	Disagree in full	58.5% (1361)
	Don't know	0.5% (12)
Waiting time: I have to wait too long to get an appointment	Fully agree	22.2% (517)
	Agree for the most part	16.9% (393)
	Neither agree nor disagree	4.5% (105)
	Disagree somewhat	12.1% (281)
	Disagree in full	43.6% (1013)
	Don't know	0.3% (17)

allocated more than 100 extra persons compared with what he/she stated [10].

Most probably, patients express satisfaction with their GP if they are listed with a GP of their own choice [11,12]. In the survey we therefore asked whether or not the patient was allocated to the doctor ranked as the first choice on the entry form, and we included a first-choice variable that equalled one if a patient was assigned to his/her first-choice doctor. To take account of the fact that some patients ranked a GP experiencing patient shortage first on the entry form and were assigned to him/her due to the allocation process, we included an interaction variable (first choice × patient shortage).

In accordance with the indicator of patient shortage, a series of explanatory variables were included as control variables in the analysis: respectively, the GP's age and gender, patient characteristics (socio-demographic variables and preferences), characteristics of the municipality's organization of primary care, and whether or not the first-choice GP was fulfilled [6,9,11–14]. We employed a multivariate logistic regression model to estimate the probabilities of answering fully agree or agree on each statement. Note that because the questions on waiting time and consultation length were asked negatively we inverted the scale, which makes it easier to compare the results of the five different indicators on satisfaction. Data were analysed using SPSS.

**Results**

Because the questions on satisfaction were only asked if patients had visited their regular GP after the reform, our sample included persons that were more frequent users of healthcare than average; this is reflected in the difference between the total sample and the net sample used in the analysis (Table II). Compared with the whole sample, a larger share in our sample were females and a smaller share had very good health. Correspondingly, a smaller share did not have a personal doctor before the reform and a larger share was assigned their first-choice doctor. While 9% of the total sample preferred to use more than one doctor for their health problems, 6% of the net sample shared this view.

Adjusted for patient characteristics, characteristics of the municipality's organization of primary care' and the GP's age and gender, patients listed with GPs experiencing patient shortage were more satisfied than others with the waiting time, but less satisfied along four dimensions: interpersonal skills, medical skills, referral practices, and length of the consultation. Patients listed with their first-choice GP were more satisfied with the GP's interpersonal skills, medical skills, and referral practices. We also

Table II. Descriptive statistics Survey of Living Conditions: Frequency, n (mean, SD).

Variable	Sample n = 3588	Net sample n = 2326
<b>Age</b>		
24 and younger	11% (398)	8% (176)
25–44	39% (1404)	39% (899)
45–66	35% (1256)	37% (864)
67–79	11% (380)	12% (283)
80 and older	4% (150)	4% (104)
<b>Gender</b>		
Female	52% (1859)	58% (1350)
<b>Education</b>		
Middle school	16% (576)	18% (409)
High school	57% (2036)	55% (1288)
College, university and above	26% (947)	26% (615)
<b>Health</b>		
Very good	27% (958)	23% (525)
Good	50% (1775)	48% (1116)
Neither good nor bad	17% (600)	20% (461)
Bad	6% (227)	9% (202)
Very bad	1% (24)	1% (20)
<b>Preference</b>		
Prefer to use one GP	88% (2829)	93% (1932)
Prefer to use many	9% (289)	6% (118)
<b>Gender preference</b>		
Prefer a male GP	7% (209)	7% (151)
Prefer a female GP	9% (289)	10% (217)
No gender preferences	84% (2705)	82% (1715)
<b>GP's age</b>		
25–44	33% (1156)	31% (716)
45–66	66% (2282)	68% (1562)
67+	1% (37)	1% (22)
<b>GP's gender</b>		
Female	26% (871)	25% (569)
<b>Too many patients</b>		
GP's list size longer than stated	13% (476)	14% (333)
<b>Patient shortage</b>		
GP's list size shorter than stated	33% (1178)	30% (707)
<b>First choice</b>		
Did not have a personal doctor before the reform	26% (820)	19% (401)
Share of GP's paid salary	0.14 (0.19)	0.13 (0.17)
The share of interns	0.07 (0.09)	0.07 (0.08)
GP density	8.98 (1.78)	8.83 (1.61)

found that if a patient ranked a GP experiencing patient shortage first on the entry form and was allocated to this GP due to the allocation process, he/she was satisfied with the assigned GP.

**Discussion**

Earlier studies on patient satisfaction are either based on questionnaires to representative samples of the population [7] or on interviews with patients

Table III. Adjusted odds ratio of individuals' satisfaction with their assigned GP (95% CI).

Variable	Interpersonal skills	Medical skills	Referral practice
<b>Age</b>			
24 and younger	1	1	1
25–44	0.72 (0.31 to 1.70)	0.77 (0.34 to 1.70)	1.02 (0.62 to 1.67)
45–66	0.81 (0.33 to 1.98)	0.61 (0.27 to 1.37)	1.45 (0.86 to 2.44)
67–79	0.87 (0.30 to 2.47)	0.86 (0.33 to 2.26)	1.06 (0.58 to 1.93)
80+	1.23 (0.23 to 6.57)	0.57 (0.16 to 1.96)	1.98 (0.69 to 5.74)
<b>Gender</b>			
Female	1.02 (0.64 to 1.62)	1.06 (0.71 to 1.57)	1.98 (1.49 to 2.62)
<b>Education</b>			
Middle school	1	1	1
High school	0.79 (0.42 to 1.47)	0.65 (0.37 to 1.14)	1.23 (0.85 to 1.80)
College, university and above	1.02 (0.50 to 2.10)	0.64 (0.34 to 1.19)	1.21 (0.79 to 1.85)
<b>Health</b>			
Very good	1	1	1
Good	1.03 (0.59 to 1.80)	0.84 (0.50 to 1.41)	1.19 (0.87 to 1.64)
Neither good nor bad	0.60 (0.32 to 1.13)	0.45 (0.25 to 0.80)	1.24 (0.83 to 1.86)
Bad	0.76 (0.32 to 1.79)	0.41 (0.21 to 0.83)	2.20 (1.17 to 4.15)
Very bad	0.59 (0.07 to 5.26)	0.68 (0.08 to 6.07)	3.37 (0.39 to 28.85)
<b>Preference</b>			
Prefer to use one GP	1	1	1
Prefer to use many	0.49 (0.24 to 1.00)	0.61 (0.31 to 1.19)	0.61 (0.36 to 1.01)
<b>Gender preference</b>			
Prefer a male GP	1.27 (0.49 to 3.25)	1.48 (0.66 to 3.31)	1.44 (0.84 to 2.49)
Prefer a female GP	0.39 (0.20 to 0.75)	0.67 (0.36 to 1.24)	0.78 (0.49 to 1.24)
No gender preferences	1	1	1
<b>GP's age</b>			
25–44	2.48 (0.52 to 11.79)	1.36 (0.29 to 6.35)	0.79 (0.22 to 2.84)
45–66	1.77 (0.38 to 8.19)	1.39 (0.30 to 6.40)	0.84 (0.23 to 2.99)
67+	1	1	1
<b>GP's gender</b>			
Female	1.45 (0.81 to 2.58)	1.21 (0.74 to 1.97)	0.96 (0.68 to 1.35)
<b>Too many patients</b>			
The GP's list size longer than stated	2.00 (0.84 to 4.75)	2.17 (0.98 to 4.82)	1.03 (0.68 to 1.57)
<b>Patient shortage</b>			
GP's list size shorter than stated	0.41 (0.23 to 0.72)	0.46 (0.27 to 0.78)	0.48 (0.33 to 0.72)
First choice	2.74 (1.62 to 4.64)	2.61 (1.61 to 4.23)	2.17 (1.51 to 3.14)
First choice × patient shortage	3.65 (1.68 to 7.91)	1.92 (1.02 to 3.61)	2.15 (1.34 to 3.47)
Did not have a personal doctor before the reform	0.92 (0.54 to 1.56)	0.66 (0.42 to 1.05)	0.79 (0.57 to 1.11)
Share of GPs that are paid salary	1.01 (0.28 to 3.62)	4.27 (0.96 to 19.09)	0.74 (0.33 to 1.68)
Share of GPs that are interns	1.10 (0.04 to 27.42)	1.00 (0.06 to 18.13)	14.45 (1.63 to 127.77)
GP density	1.00 (0.86 to 1.17)	1.04 (0.90 to 1.20)	0.95 (0.87 to 1.05)

in the doctor's waiting room [12]. The advantage of the first studies is that they may cover a representative sample of the population, while the advantage of the latter is that they include specific information on the doctor and his/her practice [15]. Because we received permission from the Data Inspectorate to merge information from a representative sample of the population with registered information on the GPs, our study has both of these advantages, which made it possible to explore the association between the explanatory variables and patient satisfaction in a thorough way.

Even though earlier studies have shown that GPs experiencing patient shortage provide more and longer consultations and more services per consultation to persons on their lists, we found that patients listed with these GPs were less satisfied than others with the GP's interpersonal skills, medical skills, referral practices, and consultation lengths. We could not explore the causality between the GPs' skills and behaviour and whether or not they experienced patient shortage; did they experience patient shortage because they behaved in a way the patients did not like before the reform, or did they

Table III (Continued)

Variable	Consultation length	Waiting time
<b>Age</b>		
24 and younger	1	1
25–44	1.28 (0.83, 1.95)	1.59 (1.08, 2.35)
45–66	1.22 (0.79, 1.89)	1.67 (1.12, 2.47)
67–79	1.33 (0.80, 2.21)	1.92 (1.21, 3.05)
80+	2.21 (1.00, 4.85)	2.89 (1.45, 5.75)
<b>Gender</b>		
Female	0.81 (0.65, 1.03)	0.80 (0.65, 0.99)
<b>Education</b>		
Middle school	1	1
High school	0.92 (0.68, 1.25)	0.97 (0.74, 1.27)
College, university and above	0.99 (0.70, 1.41)	1.07 (0.78, 1.46)
<b>Health</b>		
Very good	1	1
Good	0.96 (0.72, 1.27)	0.85 (0.69, 1.09)
Neither good nor bad	0.69 (0.49, 0.96)	0.77 (0.57, 1.05)
Bad	0.60 (0.40, 0.91)	0.88 (0.60, 1.30)
Very bad	0.21 (0.06, 0.70)	1.64 (0.41, 6.49)
<b>Preference</b>		
Prefer to use one GP	1	1
Prefer to use many	0.85 (0.53, 1.36)	0.79 (0.52, 1.22)
<b>Gender preference</b>		
Prefer a male GP	0.89 (0.60, 1.34)	1.14 (0.79, 1.66)
Prefer a female GP	0.84 (0.58, 1.22)	0.76 (0.54, 1.06)
No gender preferences	1	1
<b>GP's age</b>		
25–44	0.86 (0.28, 2.65)	0.48 (0.17, 1.36)
45–66	0.73 (0.24, 2.22)	0.45 (0.16, 1.27)
67+	1	1
<b>GP's gender</b>		
Female	0.85 (0.64, 1.12)	0.66 (0.51, 0.84)
<b>Too many patients</b>		
GP's list size longer than stated	0.84 (0.62, 1.16)	0.94 (0.71, 1.24)
<b>Patient shortage</b>		
GP's list size shorter than stated	0.63 (0.44, 0.92)	1.67 (1.17, 2.39)
First choice	1.08 (0.75, 1.54)	1.12 (0.81, 1.54)
First choice × patient shortage	1.53 (0.99, 2.35)	1.12 (0.74, 1.69)
Did not have a personal doctor before the reform	1.01 (0.75, 1.36)	0.81 (0.62, 1.06)
Share of GPs that are paid salary	0.81 (0.42, 1.59)	0.89 (0.49, 1.61)
Share of GPs that are interns	0.58 (0.13, 2.96)	0.40 (0.09, 1.67)
GP density	1.11 (1.02, 1.20)	1.05 (0.97, 1.13)

behave in a certain way because they experienced patient shortage after the reform? One possible hypothesis is that these GPs have some characteristics connected to personality or practice styles that patients in general do not like, i.e. that an indicator of patient shortage is a predictor of other characteristics of the GP. Hence, experiencing patient shortage is not only a matter of technical allocation of patients to doctors, but may cover underlying characteristics of the doctor.

The results can be seen in relation to the literature on choosing and changing a doctor, where for

instance Wolinsky et al. [16] identified that one out of four sets of important elements when people choose a new doctor is a qualitative evaluation of prior patient–practitioner relationships. Bornstein et al. [17] concluded that people perceive relevant professional factors and management practices as more important than the doctors' personal characteristics, and that the patient's own characteristics were less important than the characteristics of the doctor in the choosing process [18]. Conversely, Gandhi et al. [19] interviewed patients regarding why they changed their doctor and found the largest

single category to be accessibility, closely followed by attitudinal problems. Bjerrum et al. [20] found the most common reason to be dissatisfaction with the quality, too little time allowed, and a lack of communication [21]. Hence, characteristics of the doctor are important both when people choose their doctor and when they change to another doctor.

It is surprising that patients listed with GPs experiencing patient shortage were less satisfied than others with the consultation length. One explanation might be that the lack of communication has an influence on the patients' experience of time. The result is related to the finding that patients listed with these GPs are more satisfied with the waiting time. Perhaps GPs with patient shortage used their spare capacity to offer patients shorter waits, not longer consultations. This confirms results from analysis of data from the experiment with the regular general practitioner scheme in Norway in 1993–1996 [5].

In accordance with the literature we found that patients listed with their first-choice GP were more satisfied than others in terms of interpersonal skills, medical skills, and referral practices [11,12]. In our study, this was true even if the first-choice GP experienced patient shortage. One obvious interpretation of this result is that patients expressed satisfaction when their first choice was accommodated. However, in most cases patients listed with their first-choice doctor had experienced the GP's practice style for a long time, and they ranked this GP first because they trusted him/her and felt confident about the way their health problems were handled. Practice style is a complex concept that includes personal style, deliberate strategy, attitude, and personality, as recently illuminated by Landström et al. [22] and Gulbrandsen et al. [23] in this journal. Even if some practice styles are more popular than others, many patients like doctors who are not particularly popular, stay with them, and harvest the fruits of a continuous relationship [13,24]. Most probably, GPs and patients found each other before the reform, and what we measured was the influence of continuity of care on satisfaction. Hence, a possible interpretation is that continuity of care still is an important explanation as to why people express satisfaction with their GP.

The validity of our study is supported by earlier studies on the effect of being listed with a GP of a patient's choice, the effect of a GP's gender, the effect of patient characteristics, and the effect of the organization of primary care on satisfaction [9,11–14]. Accordingly, the analysis indicated a relation between patient satisfaction and patient shortage, i.e. that experiencing patient shortage might be connected with the GP's personality and

practice style. The result from the literature on supplier-induced demand is that GPs experiencing patient shortage provide more services than the average [25,26]. From our study it follows that it is not obvious that a service-intensive practice style is what patients prefer. One important question for further research is whether or not patients listed with GPs experiencing patient shortage and those who were not listed with their first-choice doctor will be more satisfied with the GP's skills when they become more familiar with the doctor. These issues will be analysed on the basis of the next version of the Norwegian Living Condition Survey.

### Acknowledgements

The paper is a revised version of a presentation at the Wonca Europe Conference, Amsterdam 2–4 June 2004. Thanks are offered to Grete Botten, Hogne Sandvik, Pål Gulbrandsen, and participants at the 5th World Congress of the International Health Economics Association, 10–13 July 2005, in Barcelona for helpful comments and suggestions on a previous version of the paper.

The study was funded by the Research Council of Norway.

### Note

1. To allocate GPs to all inhabitants in the Norwegian population, the health authority used an algorithm. Input to the algorithm included information the inhabitants filled in on the entry form prior to the reform.

### References

- [1] Sandvik H. [The evaluation of the regular general practitioner scheme 2001–2005] [summary in English]. Research Council of Norway; 2005.
- [2] Iversen T, Lurås H. [Shortage of doctors became shortage of patients: Variations in stated listsize and patient shortage due to the introduction of the regular general practitioner scheme]. *Økonomisk Forum* 2002;8:26–31.
- [3] Iversen T, Lurås H. Economic motives and professional norms: The case of general medical practice. *J Econ Behav Organ* 2000;43:447–70.
- [4] Iversen T. The effect of patient shortage on general practitioners' future income and list of patients. *J Health Econ* 2000;23:673–94.
- [5] Iversen T, Lurås H. Waiting time as a competitive device: An example from general medical practice. *Int J Health Care Finance and Economics* 2002;2:189–204.
- [6] Finnvold JE, Lurås H, Paulsen B. [The regular general practitioner scheme: Most people were assigned to their preferred GP]. *Samfunnsspeilet* 2003;5:2–11.
- [7] Williams S, Calnan M. Key determinants of consumer satisfaction with general practice. *Fam Pract* 1991;8:237–42.

- [8] Hulka B, Kupper L, Daly M, Cassel J, Schoen F. Correlates of satisfaction and dissatisfaction with medical care. *Medical Care* 1975;13:648–58.
- [9] Sitzia J, Wood N. Patient satisfaction: A review of issues and concepts. *Soc Sci Med* 1997;45:1829–43.
- [10] Iversen T, Lurås H. The importance of micro-data for revealing income motivated behaviour among GPs. In: Lindgren B, editor. *Individual decisions for health*. London: Routledge; 2002. p. 182–93.
- [11] Shmittiel J, Selby JV, Grumbach K, Quesenberry CP Jr. Choice of a personal physician and patient satisfaction in a health maintenance organization. *JAMA* 1997;278:1596–9. Erratum in: *JAMA* 1998;279:656.
- [12] Schers H, van den Hoogen H, Bor H, Grol R, van den Bosch W. Preference for a general practitioner and patients' evaluations of care: A cross-sectional study. *Br J Gen Pract* 2004;54:693–4.
- [13] Kalda R, Polluste K, Lember M. Patient satisfaction with care is associated with personal choice of physician. *Health Policy* 2003;64:55–62.
- [14] Lurås H. Individuals' preferences for GPs: Choice analysis from the establishment of a list patient system. Working Paper 2003:5. Oslo: Health Economic Research Programme (HERO), University of Oslo.
- [15] Maintz J, Vedsted P, Olesen F. Hvordan vurderer patienterne de praktiserende læger? (How do patients evaluate general practitioners?) *Ugeskr Læger* 2000;162:654–8.
- [16] Wolinsky F, Steiber S. Salient issues in choosing a new doctor. *Soc Sci Med* 1982;16:759–67.
- [17] Bornstein B, Marcus D, Cassidy W. Choosing a doctor: An explorative study of factors influencing patients' choice of a primary care doctor. *J Evaluation in Clinical Practice* 2000; 6:255–62.
- [18] McGlone TA, Butler ES, McGlone VL. Factors influencing consumers' selection of a primary care physician. *Health Marketing Q* 2002;19:21–37.
- [19] Gandhi IG, Parle JV, Greenfield SM, Gould S. A qualitative investigation into why patients change their GPs. *Fam Pract* 1997;14:49–57.
- [20] Bjerrum L, Sorensen AS. [Why do patients change physicians?]. *Ugeskr Laeger* 1992;154:3587–9.
- [21] Billingham B, Whitfield M. Why do patients change their general practitioner? A postal questionnaire study of patients in Avon. *Br J Gen Pract* 1993;43:336–8.
- [22] Landström B, Rudebeck CE, Mattsson B. Working behaviour of competent general practitioners: Personal styles and deliberate strategies. *Scand J Prim Health Care* 2006;24: 122–8.
- [23] Nylenna M, Pål Gulbrandsen, Førde R, Aasland OG. Job satisfaction among Norwegian general practitioners. *Scand J Prim Health Care* 2005;23:198–202.
- [24] Hjortdahl P, Lærum E. Continuity of care in general practice: Effect on patient satisfaction. *BMJ* 1992;304: 1287–90.
- [25] McGuire T. Physician agency. In: Culyer AJ, Newhouse JP, editors. *Handbook of health economics*. Amsterdam: Elsevier; 2000. vol 1, p 461–536.
- [26] Scott A. Economics of general practice. In: Culyer AJ, Newhouse JP, editors. *Handbook of health economics*. Amsterdam: Elsevier; 2000. vol 1, p 1175–1200.