ORIGINAL ARTICLE

Association between patients' recommendation of their GP and their evaluation of the GP

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Abstract

Objective. Patient priorities and patient evaluations indicate that accessibility should receive more attention to increase quality in general practice. The definition of family medicine emphasizes the patient-centred approach, communication skills, continuity, and clinical skills. We aimed to explore the associations between the 23 items in the Europep questionnaire measuring patient evaluation of general practice and the patients' recommendation of their general practitioner (GP) to friends and to study the relationship of these items with the core competences of family medicine. **Design.** Cross-sectional study where patients aged 18 years and over attending the practice were included. Patients completed the Danish version of the 23 item Europep questionnaire and an additional item about the degree to which they could recommend their GP to friends. **Setting.** Danish general practice (the DanPEP study). **Subjects.** A total of 50 191 patients and 690 GPs were included in the analyses. **Main outcome measures.** For each item, associations were calculated between a positive answer and the degree to which the patient could recommend the GP. Analyses were made at patient and GP levels. **Results.** We found 12 items that covered the 10 most strongly associated items from both analyses: four of six items from the "doctor–patient relationship", two of five items from "medical care", and all items from "information and support" and "organization of services". No items from "accessibility" were among the 12 items. **Conclusions.** Recommending the GP to others was most strongly associated with the "emphatic", "patient-oriented", "informative and coordinating", and "competent/skilled" GP and to a lesser degree with accessibility to general practice.

Key Words: *Family practice, Denmark, patient evaluation, patient satisfaction, quality*

Family medicine has been defined through academic consensus discussions and has 11 characteristics related to the provision of care, the patient-oriented approach, and continuity [2]. Studies on patients' priorities for general practice care have found that patients give high priority to "humaneness", "competence", "involvement in decisions", "time for care", "availability/accessibility", "informativeness", "exploring patients' needs", "doctor–patient relationship and good communication skills", and "availability of special services" [3,4].

Patients and GPs have different, although correlated, priorities. It has been found that GPs attach lower priority to "accessibility" than the patients do [5]. A Dutch study showed that GPs thought they could improve the quality of aspects concerning listening, time during the consultation, and accessibility [6]. However, it is unknown which of the

We lack knowledge about which family medicine aspects are actually associated with more positive patient evaluations of general practice.

- The domains "doctor–patient relationship", "medical care", "information and support", and "organization of services", but not "accessibility", covered the aspects most strongly associated with patients' recommendation of their GP to friends.
- The strongest associations were found for items about the "emphatic", "patient-oriented", "informative and coordinating", and "competent/skilled" GP.

aspects GPs should give high priority to in order to create high-quality general practice [7]. Thus, there

is a need for knowledge about which aspects GPs should focus on [8]. Do patients actually see the emphatic GP as a "more recommendable" GP than less emphatic GPs or do they think that good accessibility makes a good GP [9–12]?

A 23-item European evaluation questionnaire for general practice (Europep) was constructed based on the literature and patients' priorities [13] and used in a nationwide study in Denmark, the DanPEP survey, during 2002–2005. The patients were also asked to what degree they could recommend their GP to friends. This question is regarded as a generic evaluation of the GP [14]. This gives the opportunity to explore the associations between the 23 items and the patients' recommendation of their GP.

The aim of this study was to explore the associations between the answers to the 23 items and the patients' recommendation of their GP and to identify the 10 most strongly associated items to determine what core competences these items could be related to.

Material and methods

GP and patient populations

During 2002–2005, 703 GPs participated in the DanPEP survey. The GPs were divided into three groups because other aims of the project were to study the effect of reminders and postal questionnaires to patients. Hence, 121 GPs each distributed 130 questionnaires to consecutive patients [15], 391 GPs each distributed 100 questionnaires to consecutive patients, and for 191 GPs questionnaires were sent directly from the DanPEP secretary to 150 patients. Non-responders from the two latter groups received a reminder from the DanPEP secretariat 3–5 weeks after the consultation. Patients included in the study were aged 18 or over, attending the surgery, and able to read and understand Danish. Patients completed the questionnaires at home and returned them to the secretariat. A total of 83 480 questionnaires were distributed and 56 594 eligible patients responded (67.8%).

Questionnaire

The original Europep questionnaire, assessing five domains (doctor–patient relationship, medical care, information and support, organization of services, and accessibility), was developed on the basis of a systematic literature review, patient interviews, and a study on patient priorities [13] followed by a validation study [16]. As the questionnaire was developed so that each item provided specific information (not as sum-scales), and as psycho-

metric analyses suggest that the proposed factorial structure may not exist [1] each item was analysed separately.

The patients were asked to evaluate their GP on a five-point scale ranging from "poor" (1), through acceptable (3) to "excellent" (5), where (2) and (4) had no response text. Alternatively, patients could respond "Not applicable/relevant" [13]. All items were scored in the same direction. Finally, the questionnaire contained a reference statement: "I can strongly recommend my GP to my friends", which was answered on a five-point scale with the response options "strongly disagree", "disagree", "neither nor", "agree", and "strongly agree", besides the category "not applicable/relevant". This statement was chosen based on the work in the Europep study group [16]. It is generally accepted that asking the patient to recommend a healthcare professional to others is a latent variable describing the construct of the patient evaluation of delivered treatment and care and the extent to which outcomes important to patients are achieved [14]. Furthermore, studies have shown that recommendation seems to be a better generic measure of patient evaluation than general satisfaction because of better discrimination between different patient groups and a lower ceiling effect [17–18].

Analyses

In the analyses we included patients with valid questionnaire responses and a response to the item about recommending their GP. A questionnaire response was defined as valid when the patient had been registered with the GP for at least one year, had filled in at least 50% (12 or more) of the 23 evaluation items and if the evaluated GP participated in the study. Patients registered with a GP who did not include at least 25 patients were excluded from the analyses. Answers to the 23 items were dichotomized into positive (4 and 5 on the 1–5-point scale) and not positive (1–3). The answers "Not applicable/relevant" were regarded as missing values. We performed analyses at patient and GP levels.

Patient level

The association between a positive answer to an item and a positive answer to recommending the GP was calculated as the prevalence ratio (PR) using patients answering "disagree" about recommending their GP as reference. Thus, the answers to the question about recommending the GP were dichotomized into disagree (1 and 2 on the 1–5-point scale) and agree (4 and 5). We chose a generalized linear model (GLM) using an additive model (identity link) for a

binomial outcome. We adjusted for clusters of patients around GPs, patient gender, age, self-rated health, chronic conditions (disease with duration of 3 or more months), number of surgery contacts/home visits (during 12 months) with the practice, and years on the GP's list.

GP level

These analyses aggregated each item for each GP by calculating the proportion of all respondents giving a positive response (4 and 5) to the items. The item about recommending the GP was aggregated as the mean score (1 to 5). Associations were calculated as the coefficient in a GLM using gamma distribution (negatively skewed distribution of positive answers) and identity link. We present the association as the relative increase in mean recommendation score when the proportion of positive responses to the evaluation item increases by 10%. In these analyses we used robust standard errors (cluster of patients evaluating a GP) and adjusted for GP gender, seniority, weekly working hours, number of patients registered with the practice, type of practice (single-handed or partnership), and practice location (urban, rural, mixed).

Item rank

Based on the strength of the associations we ranked each item and identified the items covering the 10 most strongly associated items in each analysis. We ranked all the identified items based on the mean rank scores in the two analyses. Then we related each of these items to the definition of family medicine [2].

Results

A total of 50 191 patients whose GPs ($n = 690$) had included at least 25 patients responded to at least 12 of the 23 evaluation items as well as the item about recommending their GP. Patient and GP characteristics are given in Tables I and II. Table III shows the proportion of positive patient assessments for the 23 items. Associations (Table III, columns 4–6) between positive answers and patients' willingness to recommend their GP are illustrated by the PRs. From the "rank" column it appears that the 10 strongest associations were found for the domains "doctor–patient relationship", "medical care", and "information and support". No items from the "organization of services" and "accessibility" domains were among the 10 strongest associations.

The results from the analysis at GP level (Table III, columns 7–9) showed that the highest increase in

Table I. Characteristics of the patients who evaluated the GPs.

		n	%
Gender			
n = 50 147	Female	33960	67.7
	Male	16187	32.3
Age			
n = 50 073	18–24	2242	4.5
	25–29	3555	7.1
	30–34	5147	10.3
	35–39	5059	10.1
	40–44	4330	8.7
	45–49	4017	8.0
	50–54	4159	8.3
	55–59	4703	9.4
	60–64	4111	8.2
	65–69	3773	7.5
	70–74	3432	6.9
	75–79	2913	5.8
	80+	2632	5.3
Third-level education ¹ (number of years)			
n = 47 482	None	12 463	26.3
	Less than 2	3691	7.8
	2–4	25 947	54.7
	5 or more	5381	11.3
Number of contacts ² (in previous 12 months)			
n = 47 447	0–1	4172	8.8
	2–3	14 367	30.3
	4–5	12 195	25.7
	6–7	6521	13.7
	8–9	3401	7.2
	10+	6791	14.3
Duration of listing with GP (years)			
n = 40 241	1–2	4790	11.9
	3–7	13 453	33.4
	8–12	9562	23.8
	13+	12 436	30.9
Self-rated health			
n = 49 861	Excellent	3988	8.0
	Very good	14 895	29.9
	Good	19 612	39.3
	Fair	9558	19.2
	Poor	1808	3.6
Chronic condition ³			
n = 49 086	No	24 028	49.0
	Yes	25 058	51.1

Notes: The patients were included consecutively by 690 GPs.

¹Vocational training. ²Surgery and home visits. ³Duration of more than six months.

mean score for willingness to recommend the GP was seen for 10 items in the domains: "doctor–patient relationship", "medical care", "information and support", and also for the "organization of services". No "accessibility" items were among the 10 strongest associations.

A total of 12 items were found to cover the 10 most strongly associated items from both analyses (Table IV): four of six items from "doctor–patient relationship", two of five items from "medical care", and all items from "information and support" and

Table II. Characteristics of the 690 GPs included in the analyses.

		n	%
Gender			
n = 689	Male	448	65.0
	Female	241	35.0
Age (mean = 50.5 years)			
n = 688	<45	143	20.8
	45–49	140	20.4
	50–54	198	28.8
	55–59	152	22.1
	60+	55	8.0
Years as a GP (mean = 14.0)			
n = 683	<5	106	15.5
	5–9	130	19.0
	10–15	165	24.2
	16–22	138	20.2
	23+	144	21.1
Weekly working hours (mean = 40.1 hours)			
n = 684	<36	162	23.7
	36–39	112	16.4
	40–44	215	31.4
	45+	195	28.5
Degree of urbanization			
n = 684	Town	326	47.7
	Rural	103	15.1
	Mixed	255	37.3
Number of patients in practice (mean = 4054)			
n = 683	<1800	137	20.1
	1800–2999	137	20.1
	3000–3999	128	18.7
	4000–5999	146	21.4
	6000+	135	19.8
Type of practice			
n = 690	Single-handed	128	18.6
	Partnership	562	81.5

Note: The GPs provided the information in a questionnaire for participants.

“organization of services” were included. No “accessibility” items were among the 12 items.

Discussion

Main findings

We found that items from all domains except “accessibility” were among the items most strongly associated with recommending the GP to others. In relation to the definition of family medicine, these items may be divided into items [19] concerning the “emphatic GP” who is interested in the patient’s situation, listening and making it easy for him/her to talk about problems and helping him/her deal with emotional problems, the “patient-oriented GP” who involves the patient in decisions and helps him/her understand the importance of following advice given, “the informative and coordinating GP” who tells the patient what he/she wants to know, prepares

him/her for what to expect from a specialist or hospital care and explains the purpose of tests and treatments and knows what has been done or said previously and, finally, the “competent/skilled GP” who is thorough and does a careful physical examination.

Remarkably, “making you feel you had time during consultations” was not among the 12 strongest associations. Also remarkable was that items concerning “accessibility” had the weakest association.

Strengths, bias and generalizability

The statistical precision was high. We made analyses at patient (individual) and GP (aggregated) levels ensuring that both analytical strategies gave information about the ranking of the items. The differences in ranking between the analyses thus reflect adjustment for different confounders and the two different ways of analysing the item about recommending the GP.

The GPs participated voluntarily in the DanPEP study and may thus have been more interested and motivated than GPs in general which may, in turn, have resulted in more positive evaluations. Selection bias could also occur if the GPs handed out questionnaires to patients whom they knew were more positive in their evaluations. We were unable to estimate the possible resulting influence of this selection bias. The number of women included was about 50% higher than the number of men, which reflects the more frequent use of general practice among women [20].

We used a single item as a reference or external anchor of a generic evaluation of the GP. We did not assume that this item was the “gold standard” of patient evaluation as there is no single validated measure of the latent variable of overall patient evaluation of general practice care. However, the reference was taken from the original validation study [16] and, as mentioned earlier, recommendation is generally accepted to describe the construct of patient evaluation [14] and perhaps better than general satisfaction [17,18].

The way we related the highest ranked items to the concept of the definition of family medicine was based on item content and not on empirical validation. However, we did not aim to conceptualize the definition of family medicine, but only to describe the relationship between highly ranked items and the definition of family medicine.

This study included a large number of patients and GPs, and therefore the results may be generalized to other general practice settings where patients

Table III. Associations between patients' recommendation of their GP and each of the 23 items in the DanPEP questionnaire.

The questions began as follows: What is your opinion of the GP and/or general practice over the last 12 months with respect to . . .			Recommend the GP ¹ ("disagree" as reference)			Relative increase in no. of patients recommending their GP (with 10% more positive answers)		
Item	% positive answers ²	95% CI	PR ³	95% CI	Rank	Increase ⁴	95% CI	Rank
Doctor-patient relationship								
Making you feel you had time during consultations?	78.4	77.7–79.2	1.88	1.83–1.92	11	10.5	9.7–11.3	12
Interest in your personal situation?	81.0	80.3–81.7	2.01	1.97–2.06	2	12.7	12.1–13.4	2
Making it easy for you to tell him or her about your problems?	81.2	80.5–81.8	1.97	1.93–2.01	5	11.9	11.3–12.5	4
Involving you in decisions about your medical care?	78.3	77.6–79.0	1.89	1.85–1.94	9	11.0	10.4–11.7	8
Listening to you?	84.2	83.6–84.8	2.00	1.95–2.05	3	10.8	10.2–11.3	11
Keeping your records and data confidential?	94.2	93.9–94.5	1.27	1.24–1.31	20	3.3	2.9–3.7	21
Medical care								
Quick relief of your symptoms?	74.2	73.6–74.8	1.83	1.79–1.87	13	9.5	8.8–10.2	15
Helping you feel well so that you can perform your normal daily activities?	74.7	74.1–75.3	1.82	1.78–1.87	14	9.5	8.7–10.2	16
Thoroughness?	82.1	81.5–82.8	2.04	2.00–2.08	1	11.3	10.7–11.9	7
Physical examination of you?	81.2	80.6–81.9	1.96	1.92–2.01	6	10.9	10.3–11.5	10
Offering you services for preventing diseases?	73.5	72.8–74.1	1.79	1.74–1.83	16	10.3	9.6–11.0	13
Information and support								
Explaining the purpose of tests and treatments?	80.0	79.3–80.6	1.88	1.84–1.93	10	11.0	10.4–11.6	9
Telling you what you wanted to know about your symptoms and/or illness?	76.4	75.7–77.2	1.97	1.93–2.01	4	12.0	11.4–12.7	3
Help in dealing with emotional problems related to your health status?	73.3	72.5–74.1	1.95	1.91–1.99	7	13.3	12.7–14.0	1
Helping you understand the importance of following his or her advice?	79.0	78.4–79.6	1.90	1.86–1.95	8	10.2	9.6–10.7	14
Organization of services								
Knowing what she/he had done or told you during previous contacts?	73.6	72.9–74.4	1.81	1.77–1.86	15	11.6	10.8–12.4	6
Preparing you for what to expect from specialist or hospital care?	71.0	70.2–71.7	1.85	1.81–1.89	12	11.9	11.1–12.6	5
Accessibility								
The helpfulness of the staff (other than the doctor)?	73.7	72.7–74.6	1.27	1.23–1.31	22	3.3	2.0–4.6	22
Getting an appointment to suit you?	67.4	66.2–68.7	1.35	1.31–1.39	19	3.6	2.2–5.0	20
Getting through to the practice on the phone?	48.8	47.4–50.2	1.26	1.22–1.29	23	3.0	1.2–4.7	23
Being able to speak to the GP on the telephone?	54.4	53.0–55.7	1.38	1.34–1.42	18	4.0	2.3–5.7	18
Waiting time in the waiting room?	48.2	46.8–49.7	1.27	1.24–1.31	21	3.8	2.3–5.4	19
Providing quick services for urgent health problems?	79.0	78.3–79.8	1.65	1.60–1.71	17	6.7	5.8–7.5	17

Notes: The associations are divided into those found in the analyses at patient level (n = 50 774) and those at GP level (n = 690). The proportion of patients who answered positively is shown with 95% confidence intervals (95% CI). The association between a positive answer to an item and a positive answer to recommending the GP is expressed as the prevalence ratio (PR) using patients answering "no" to recommending their GP as reference. The association between the mean score of recommending the GP and the proportion of patients who answered positively to an item is shown as the increase in mean score when the proportion of patients answering positively to the item increases by 10%. ¹The dichotomized responses to "I can strongly recommend my GP to friends" where "Disagree" ("strongly disagree" and "disagree") was used as reference to "Agree" ("agree" and "strongly agree"). ²The proportion of patients who answered positively to the item. ³Prevalence ratio (PR) adjusted for patient characteristics (gender, age, self-rated health, chronic condition, number of surgery contacts, and years on the GP's list). ⁴The relative increase in mean score for "I can strongly recommend my GP to friends" if the proportion of positive responses increased by 10%. Adjusted for GP and practice characteristics (gender, seniority, working hours, patients registered with practice, type of practice (single-handed or partnership), and practice location (urban, rural, mixed)).

Table IV. The 12 items covering the 10 items from each of the two analyses that were most strongly associated with the patients' recommendation of their GP. The mean rank is based on the rank obtained in both analyses (see Table III).

Item	Mean rank
Interest in your personal situation?	2.0
Telling you what you wanted to know about your symptoms and/or illness?	3.5
Help in dealing with emotional problems related to your health status?	4.0
Thoroughness?	4.0
Making it easy for you to tell him or her about your problems?	4.5
Listening to you?	7.0
Physical examination of you?	8.0
Involving you in decisions about your medical care?	8.5
Preparing you for what to expect from specialist or hospital care?	8.5
Explaining the purpose of tests and treatments?	9.5
Knowing what she/he had done or told you during previous contacts?	10.5
Helping you understand the importance of following his or her advice?	11.0

are registered with a GP and the GP is a gatekeeper to the specialized healthcare system.

Comparison with other studies

Dutch GPs expected to be able to increase patient evaluation by focusing on six specific aspects [5], but our results showed that the GPs were right regarding two of these items only, namely "listening" and "making it easy to talk about problems".

The fact that accessibility has been found to receive the lowest evaluation by patients [21] has led to the conclusion that GPs should focus more on accessibility to increase patient evaluation [22]. However, our study may indicate that GPs should give higher priority to other aspects. We must emphasize that our study does not show what aspects GPs should not focus on, but only what aspect GPs may focus on to increase the degree to which patients recommend their GPs.

Conclusions and perspectives

The patient-assessed quality measured by the willingness of the patients to recommend their GP to friends was most strongly associated with the "emphatic", "patient-oriented", "informative and coordinating", and "competent/skilled" GP and only to a lesser degree with accessibility.

This study only examined a single generic measure of patient-assessed quality, and further studies are needed to determine whether our findings also apply to other generic measures.

Intervention studies in particular are needed because the GPs with poor evaluations of the aspects strongly associated with patients' recommendation of their GP may be those with the highest potential for improving their patients' generic evaluations.

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