Primary care

Importance of patient pressure and perceived pressure and perceived medical need for investigations, referral, and prescribing in primary care: nested observational study

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Abstract

Objective To assess how pressures from patients on doctors in the consultation contribute to referral and investigation.
Design Observational study nested within a randomised controlled trial.
Setting Five general practices in three settings in the United Kingdom.
Participants 847 consecutive patients, aged 16-80 years.
Main outcomes measures Patient preferences and doctors' perception of patient pressure and medical need.
Results Perceived medical need was the strongest independent predictor of all behaviours and confounded all other predictors. The doctors thought, however, there was no or only a slight indication for medical need among a significant minority of those who were examined (89/580, 15%), received a prescription (74/394, 19%), or were referred (27/125, 22%) and almost half of those investigated (99/216, 46%). After controlling for patient preference, medical need, and clustering by doctor, doctors' perceptions of patient pressure were strongly associated with prescribing (adjusted odds ratio 2.87, 95% confidence interval 1.16 to 7.08) and even more strongly associated with examination (4.38, 1.24 to 15.5), referral (10.72, 2.08 to 55.3), and investigation (3.18, 1.31 to 7.70). In all cases, doctors' perception of patient pressure was a stronger predictor than patients' preferences. Controlling for randomisation group, mean consultation time, or patient variables did not alter estimates or inferences.
Conclusions Doctors' behaviour in the consultation is most strongly associated with perceived medical need of the patient, which strongly confounds other predictors. However, a significant minority of examining, prescribing, and referral, and almost half of investigations, are still thought by the doctor to be slightly needed or not needed at all, and perceived patient pressure is a strong independent predictor of all doctor behaviours. To limit unnecessary resource use and iatrogenesis, when management decisions are not thought to be medically needed, doctors need to directly ask patients about their expectations.

Introduction

General practitioners act as the gateway to most prescribing, investigation, and referral. This has enormous implications for the use of resources in secondary care, "medicalisation," and iatrogenesis, particularly if management is unwittingly inappropriate or ineffective.[1–6] Investigating and referring also take time—the main resource in primary care and a major determinant of quality of care.[7]

Doctors' incorrect perceptions of patients' expectations predict prescribing, and, as doctors tend not to elicit patients' expectations or unvoiced agendas, this results in unnecessary prescriptions and poor compliance.[8–12] Most quantitative studies have not, however, controlled for perceived medical need: it may be that when this is controlled for there is little impact on doctors' behaviour from perceived patient pressure. Patients' personal characteristics influence referral and investigation, and a questionnaire survey of doctors showed a variety of non-medical factors that influence decisions to investigate.[3 13] Yet little work has been done to quantify doctors' perceptions of pressures from patients in consultations which lead to physical examination, further investigation, and referral. Given the importance of appropriate referrals and investigations it cannot simply be extrapolated that all doctor behaviours are the same. We therefore assessed the relative impact of patient pressure and doctors' perception of that pressure on a range of doctor behaviours in the consultation, while assessing and controlling for perceived medical need.

Methods

We collected data from 30 doctors and 847 consecutive patients attending five general practices in the Southampton area (two practices in a deprived urban area, two in a market town, and one in a city, serving around 40 000 patients). Six hundred and thirty six of these patients also contributed data to a randomised controlled trial of the effect of short patient "activation" leaflets encouraging patients to raise issues and to discuss symptoms and other health related problems in the consultation. The leaflets did not affect the key predictors of interest for this study or confound the observed associations, hence the observational inferences were not affected by participation in the trial.

Eligible participants were consecutive patients aged 16-80 years attending one of the surgeries. We excluded patients under 16 years, those requiring ongoing specialist psychiatric treatment (for example, for schizophrenia), those with dementia, mental disability, or who were very unwell, those receiving treatment for depression, and those who only collected a prescription.

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Table 1 Effect of patient pressure on whether doctors prescribed

Variable	No (%) given prescription	No (%) not given prescription	Odds ratio (95% CI)	Adjusted odds ratio* (95% CI)	P value
Perceived medical need:					
None	22 (6)	348 (87)	1	1	—
Slight	52 (13)	35 (9)	23.5 (12.8 to 43.2)	14.66 (4.23 to 50.8)	<0.0001
Moderate or definite	320 (81)	18 (4)	281.2 (148.1 to 533.9)	147.9 (39.4 to 555)	<0.0001
Perceived patient pressure:					
None	103 (27)	340 (84)	1	1	—
Slight	88 (23)	46 (11)	6.31 (4.15 to 9.60)	1.84 (0.77 to 4.38)	0.17
Moderate or definite	197 (51)	18 (4)	36.12 (21.3 to 61.4)	2.87 (1.16 to 7.08)	0.022
Direct patient pressure†:					
None	178 (46)	316 (80)	1	1	—
Slight	103 (27)	41 (10)	4.46 (2.97 to 6.69)	2.32 (1.11 to 4.84)	0.025
Moderate or definite	104 (27)	38 (10)	4.87 (3.21 to 7.35)	1.69 (0.85 to 3.33)	0.134

Denominators vary owing to missing values.
*Mutually adjusted for patient pressure, perceived pressure, and perceived medical need, and allowing for clustering by doctor.
†In preconsultation questionnaire, patient wanted prescription.

Sample size calculation

Using EPI INFO we calculated that to achieve 80% power, we required 448 questionnaires to be completed after the consultation or 640 in total, allowing for 30% non-response. This was based on the assumption that patient preference or doctors' perception of patient pressures for doctor behaviours or other variables recorded after the consultation predict doctor behaviour with an odds ratio of 2, and a prevalence from 25% to 75%.

Recruitment and data collection

Patients were given an information sheet while awaiting their consultation. If they met the inclusion criteria, we invited them to participate in the study. They were required to complete two questionnaires; a brief one before the consultation, which was collected immediately, and one after the consultation, which was posted back by the patient. The preconsultation questionnaire queried why the patients had come to see the doctor and whether they were hoping for an examination, prescription, investigation, or referral—similar to established measures used in studies on prescribing.[8–10 14] They also completed the hospital anxiety and depression scale.[8–10 14]

After the consultation the patients completed a questionnaire for age, sex, marital status, employment status, general health (World Organization of National Colleges, Academies and Academic Associations of General Practitioners/Family Physicians scale), resolution of symptoms (measure yourself medical outcome profile score, a patient generated measure), medical problems, drugs, satisfaction (medical interview satisfaction scale), and "enablement"—the extent to which patients feel helped to manage their illness.[7 14 15]

Doctors recorded the duration of the consultation (time between patient being called and patient leaving). They also recorded whether they thought the patient was depressed, whether they prescribed, investigated or referred, how much they thought these interventions were medically needed, and the pressure they felt from patients to perform each behaviour. We used Likert scales similar to those of previous studies.[8–10] We included consultation times in the models to assess the effect of the potential bias of doctor consultation time.

Data were analysed with SPSS and STATA for Windows. Logistic regression was used to determine the predictors of doctor behaviour, controlling for clustering by doctor to estimate robust standard errors.

Results

We recruited fewer patients from doctors with short (<9 minutes) consultation times (14 patients v 30 patients) because we had less time in which to comply with study protocols before the consultation. We obtained information on 45 consecutive patients booked to see doctors with long consultation times (where nearly all eligible patients could be approached): 14 (31%) were excluded (six were receiving treatment for anxiety or depression, four were out of our age range, two were too ill, and two only collected prescriptions). Of the 31 eligible patients, 17 (55%) agreed to participate. They were similar to those who did not agree for age and chronic medical problems. We received all questionnaires completed before the consultation, 418 (76%) of those completed after the consultation, and 612 (96%) completed by the doctors.

The characteristics of the study group were similar to previous national samples for the population attending general practitioners for age and being male, in paid work, and married.[16]

Patients who failed to complete the post-consultation questionnaire were similar to those who completed the study for worry about problem, feeling unwell, seeing usual doctor, and whether problem was new or ongoing.

Tables 1 to 4 show the impact of different pressures predicting each doctor behaviour. The doctors' perception of medical need was the strongest factor for determining behaviour in the consultation and significantly confounded the predictive value of both patient pressure and perceived patient pressure (change in odds ratios >50%). The doctors thought, however, there was no or only slight medical need among a significant proportion of those examined (89/580, 15%), given a prescription (74/394, 19%), or referred (27/125, 22%) and among almost half of those investigated (99/216, 46%). After perceived medical need was controlled for, perceived patient pressure was an independent predictor of doctors' behaviour for all behaviours, and a stronger predictor than patients' preferences measured before the consultation.

We found no evidence that randomisation group, duration of consultation, or potential patient factors significantly confounded the estimates from the study (see bmj.com).

Discussion

Doctors believe that a significant minority of examinations, prescriptions, and referrals, and almost half of investigations, are only slightly needed or not needed at all. Perceived pressure

Table 2 Effect of patient pressure on whether doctors examined

Variable	No (%) examined	No (%) not examined	Odds ratio (95% CI)	Adjusted odds ratio* (95% CI)	P value
Perceived medical need:					
None	33 (6)	171 (80)	1	1	—
Slight	56 (10)	31 (14)	9.36 (5.26 to 16.6)	7.48 (2.31 to 24.2)	0.001
Moderate or definite	491 (85)	13 (6)	195.7 (100.7 to 380.6)	118.0 (33.6 to 414)	<0.0001
Perceived patient pressure:					
None	189 (33)	182 (84)	1	1	—
Slight	152 (26)	29 (13)	5.05 (3.23 to 7.89)	1.20 (0.63 to 2.29)	0.573
Moderate or definite	240 (41)	6 (3)	38.5 (16.7 to 88.8.)	4.38 (1.24 to 15.5)	0.022
Direct patient pressure†:					
None	256 (44)	130 (60)	1	1	—
Slight	169 (29)	46 (21)	1.87 (1.27 to 2.75)	1.17 (0.71 to 1.91)	0.534
Moderate or definite	154 (27)	40 (19)	1.96 (1.30 to 2.94)	1.20 (0.74 to 1.95)	0.447

Denominators vary owing to missing values.
*Mutually adjusted for patient pressure, perceived pressure, and perceived medical need, and allowing for clustering by doctor.
†In preconsultation questionnaire, patient wanted to be examined.

Table 3 Effect of patient pressure on whether doctors investigated

Variable	No (%) investigated	No (%) not investigated	Odds ratio (95% CI)	Adjusted odds ratio* (95% CI)	P value
Perceived medical need:					
None	75 (35)	499 (87)	1	1	—
Slight	24 (11)	49 (9)	3.26 (1.89 to 5.62)	2.86 (1.24 to 6.64)	0.014
Moderate or definite	117 (54)	27 (5)	28.8 (178 to 46.8)	25.0 (9.62 to 64.7)	<0.0001
Perceived patient pressure:					
None	123 (57)	506 (88)	1	1	—
Slight	44 (20)	60 (10)	3.02 (1.95 to 4.67)	0.77 (0.44 to 1.35)	0.36
Moderate or definite	48 (22)	11 (2)	18.0 (21.3 to61.4)	3.18 (1.31 to 7.70)	0.01
Direct patient pressure†:					
None	141 (67)	459 (80)	1	1	—
Slight	40 (19)	64 (11)	2.03 (1.31 to 3.15)	1.79 (1.07 to 3.01)	0.027
Moderate or definite	31 (15)	49 (9)	2.06 (1.26 to 3.35)	1.12 (0.63 to 1.99)	0.70

Denominators vary owing to missing values.
*Mutually adjusted for patient pressure, perceived pressure, and perceived medical need, and allowing for clustering by doctor.
†In preconsultation questionnaire, patient wanted doctor to arrange tests.

Table 4 Effect of patient pressure on whether doctors referred

Variable	No (%) referred	No (%) not referred	Odds ratio (95% CI)	Adjusted odds ratio* (95% CI)	P value
Perceived medical need:					
None	11 (9)	628 (94)	1	1	—
Slight	16 (13)	31 (5)	29.5 (12.6 to 68.8)	11.9 (4.80 to 29.3)	0
Moderate or definite	98 (78)	8 (1)	699.4 (274.4 to 1781)	357.1 (117 to 1093)	0
Perceived patient pressure:					
None	46 (37)	629 (94)	1	1	—
Slight	23 (19)	35 (5)	8.99 (4.91 to 16.46)	1.00 (0.35 to 2.85)	0.994
Moderate or definite	55 (44)	6 (1)	125.3 (51.3 to 306.5)	10.72 (2.08 to 55.3)	0.005
Direct patient pressure†:					
None	68 (56)	579 (87)	1	1	—
Slight	20 (16)	51 (8)	3.34 (1.88 to 5.93)	1.14 (0.41 to 3.16)	0.796
Moderate or definite	34 (28)	34 (5)	8.51 (4.97 to 14.6)	5.25 (1.19 to 23.2)	0.028

Denominators vary owing to missing values.
*Mutually adjusted for patient pressure, perceived pressure, and perceived medical need, and allowing for clustering by doctor.
†In preconsultation questionnaire, patient wanted to be referred to specialist.

from patients is a strong independent predictor of whether doctors examine, prescribe, refer, or investigate. To limit unnecessary use of resources and iatrogenesis, doctors need to elicit from patients their expectations.

Limitations of study

Errors are likely to be greater when patients' expectations are measured after consultation because patients prefer their management even if it was randomised.[17] We therefore used measures of patient pressure or expectation before the consultation and doctors' perception of perceived pressure after the consultation, similar to established measures.[8–10] The measures also show construct validity: a dose-response relation; a similar pattern for each behaviour; the same pattern, even for behaviours where there is normally little or no discussion of expectations between the patients and the doctor (for example, for physical examination); the pattern for confounding as hypothesised; and quantitative findings all supported the evidence from qualitative work—that is, that doctors misconstrue expectations.[11 12]

We could not, without causing delay, recruit many patients from doctors whose consultations were short. However, controlling for average consultation time did not alter estimates or inferences, and the characteristics of the study population were similar to national datasets.

What is already known on this topic

Doctors do not ask patients about their expectations of prescriptions and misconstrue patient pressure

Previous research has not controlled for the major confounder of perceived medical need

Little is known about the pressures that influence doctors to examine, investigate, or refer

What this study adds

Doctors' behaviour is strongly associated with perceived medical need, which confounds other predictors

A significant minority of examinations, prescriptions, and referrals, and almost half of investigations, are thought by the doctor to be slightly needed or not needed

Perceived patient pressure is a strong independent predictor of all doctor behaviours

Investigation was the only doctor behaviour to be altered by the trial intervention. This was modestly increased by the general empowerment leaflet, which had a much smaller impact than any of the other variables measured.[18] Furthermore, the estimates or inferences in the models were not significantly altered by controlling for randomisation group or potential patient confounders, suggesting that these results can be generalised.

For the purposes of our study, there was little point in defining need externally as we were interested in doctors' perceptions, whether correct or not. The doctor's perception of medical need was the strongest factor in determining behaviour in the consultation and the major confounder of the estimates of the other pressures affecting behaviour. Some of this may be an acceptable rationalisation of behaviour, which nevertheless should be acknowledged and addressed in initiatives to help change professional behaviour.[19] Some patient pressure may also be rationalised as medical need, in which case we may have underestimated the effect of patient pressure and perceived patient pressure. Further qualitative work is needed to understand the most important components of perceptions of medical need for each behaviour—prior experience of the doctor or patient, social context, public initiatives, evidence, and organisational influences. Some but not all of these factors are better understood for prescribing by general practitioners, but much less so for other doctor behaviours.[8–12 20–22]

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