Primary care consultation predictors in men and women: a cohort study

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ABSTRACT

Background
Women visit their doctors more than men, but comparatively few studies have explored gender differences in consultation in detail.

Aims
To identify the factors that predicted the number of primary care consultations in men and women over a 5-year period.

Design of study
Prospective cohort study with three waves of data collection by postal questionnaire.

Setting
A single suburban general practice in Greater Manchester, UK.

Method
Consultation data were sought from primary care records on a random sample of 800 adults. The main outcome measure was the number of consultations over the 5 years of the study. Questionnaire measures included the 12-item version of the General Health Questionnaire, the Illness Attitude Scales, a somatic symptom scale, a fatigue scale, and a functional assessment of disability.

Results
Consultation data were obtained on 738 patients (445 women, 293 men, 92% of selected subjects). Longitudinal models of consultation over 5 years showed that changes in psychological distress were more strongly associated with consultation in women than in men, whereas cognitive factors (negative illness attitudes) were more strongly associated with the consultation rate in men than women.

Conclusion
The predictors of consultation in primary care may be different for men and women. A fuller understanding of the reasons for consultation may enable primary care doctors to better help individual patients, as well as perhaps contributing more generally to the development of gender specific interventions for those who consult unusually frequently.

Keywords
consultation; gender identity; health behaviour; sex factors.

INTRODUCTION

There is consistent evidence that women consult their GPs more frequently than men,[1-3] but most studies choose to treat gender as a confounding variable rather than to explicitly investigate gender differences in utilisation behaviour.[4-6]

Studies that have sought to explain gender differences in consultation behaviour have produced contradictory findings. Using data from a household survey in the US, Meininger found that the factors associated with medical consultation were similar in men and women.[7] Two British studies, however, found that psychological ill health was more strongly associated with consultation in women than men.[8,9] Contrasting with all of these findings, a recent Danish study of 294 medical inpatients found that psychological distress was significantly associated with high use of primary care services in men but not women.[10]

Factors affecting access to health care — for example, employment and family size — might also be important in explaining gender differences in consultation,[11] as might social support variables such as marital status.[12] Women are more likely to report (as well as consult with) physical symptoms.[13] Medicosociological explanations for gender differences in help-seeking highlight the different role

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expectations for the sexes: it may be more socially acceptable for women to report symptoms and feelings to health professionals, while for men this might be perceived as a sign of weakness or 'giving in' to illness.[14,15]

Previous quantitative research in this area has had a number of methodological limitations. Studies have been essentially cross-sectional in design. We were unable to locate any studies that recorded consultation rates in men and women over an extended period of time and involved multiple measures at different time points. This makes it difficult to comment on the direction of any reported associations. Although much research has focused on male and female 'frequent attenders', studies have tended to be small and, in many cases, are now two decades old.

We sought to overcome some of these difficulties by carrying out a prospective study of consultation behaviour over 5 years. We decided to treat consultation rate as a continuous variable and carried out assessments on a large sample of men and women at three time points. Our main aim was to identify the patient-related factors that independently predicted the number of primary care consultations in men and women. We hypothesised that predictors of consultation would be different in the two groups.

How this fits in

Previous work has suggested that the factors associated with consultation in primary care may be different for men and women. However, studies have been essentially cross sectional in design, have tended to focus on 'frequent attenders,' have used a limited number of measures in a small number of subjects, and in many cases are now two decades old. The findings of this longitudinal study suggest that the determinants of consultation in primary care are different for men and women. Factors related to psychological distress were more important in women, whereas physical symptoms and cognitive factors were more important in men. A fuller understanding of the reasons for consultation may enable primary care doctors to better help individual patients. Intervention for those who consult unusually frequently is a difficult conceptual area, but it may be that men and women would benefit from different interventions.

METHOD

Setting

The study was carried out at a single general practice in a relatively affluent suburb of Greater Manchester in Northern England. During the study period the practice had four full-time partners, just under 8000 patients, and used an out-of-hours deputising service. The practice used paper records throughout the study period.

Subjects

The subjects of this study were selected by simple random sampling of patients aged 18–65 years registered at the practice.[16] Of 1530 eligible patients, 1328 completed questionnaires at baseline, at 1-year follow up, and at 3-year follow up, representing a follow-up rate of nearly 90%.[17]

We calculated that a sample size of 800 subjects would give us 95% power to detect a difference of 1.5 consultations a year between men and women. These 800 subjects were selected by simple random sampling from the cohort of 1328 individuals completing the questionnaire phase of the study.

Design

Questionnaires were posted to study participants at baseline. Further questionnaires were sent out at 1-year follow up and at 3-year follow up. Non-responders were sent reminders by post in order to maximise the response rate.

Outcome measures

The main outcome measure was the total number of consultations during the 5 years of the study (1995 through to the end of 1999). We defined a consultation as an entry in the case notes reporting face-to-face contact between a patient and a GP, and included surgery consultations and home visits.[18,19] The date and presenting complaint for each consultation were recorded on a computerised database.

Although the total number of consultations was the main outcome measure, we also recorded whether the consultation was for routine or administrative reasons. These 'routine consultations' included those for contraceptive advice, pregnancy, screening, vaccinations, routine monitoring of chronic physical conditions such as hypertension and diabetes, and sickness or other certification. We also determined from the case records whether the patient suffered with a named chronic physical or psychiatric illness (according to International Classification of Diseases criteria[20]) of greater than 12 months duration. Two researchers with previous experience of obtaining data from general practice case notes examined the records in order to determine the number of consultations. Both were blind to the subjects' questionnaire responses. A pilot study involving nearly 300 consultations showed that this method of collecting data had high inter-rater reliability (Spearmans for correlation between consultation rates ranging from 0.92–1.00).

Survey instruments

The questionnaires incorporated sociodemographic

Table 1. Comparison of men and women on demographic, questionnaire, and consultation variables at baseline.

Variable	Females	Males	*P*-value for difference[a]
Median age (IQR)	51 (42–61)	52 (43–61)	0.34
Marital status *n* (%)			
Single	47 (10.6)	56 (19.2)	<0.001
Married/cohabiting	344 (77.8)	219 (75.3)	
Separated/divorced	26 (5.9)	14 (4.8)	
Widowed	25 (5.7)	2 (0.7)	
Occupational status *n* (%)			
Working full time	137 (31.3)	210 (72.2)	<0.001
Working part time	153 (34.9)	11 (3.8)	
Working in the home	72 (16.4)	2 (0.7)	
Not working — sickness	15 (3.4)	32 (11.0)	
Not working — unemployed	1 (0.2)	8 (2.7)	
Retired	54 (12.3)	25 (8.6)	
Have children *n* (%)	349 (79.3)	213 (73.4)	0.97
Chronic illness *n* (%)			
Physical	97 (21.8)	68 (23.2)	0.44
Psychiatric	42 (9.5)	20 (6.8)	
Questionnaire variables (IQR)			
Median GHQ-12 score	11 (8–14)	11 (8–14)	0.31
Median SS score	1.0 (0–2)	0 (0–1)	<0.001
Median IAS health anxiety	11 (6–16)	9 (5–14)	0.002
Median IAS illness behaviour	6.5 (4–9)	5 (2–8)	<0.001
Median SCAS score	1 (0–3)	4 (2–7)	<0.001
Median fatigue score	25 (22–25)	22 (22–24)	0.55
Consultation rate at 1-year follow up (IQR)			
Median consultation rate	4.0 (2–7)	2.0 (2–4)	<0.001
Median consultation rate[b]	2.0 (1–4)	1.0 (1–3)	<0.001

[a] χ^2 *test for categorical variables and Mann–Whitney U test for continuous variables.* [b]*excluding routine consultations. IQR = interquartile range. GHQ-12 = 12-item version of the General Health Questionnaire.*[21] *SS score = somatic symptom score. IAS = Illness Attitude Scale. SCAS = Self-Care Assessment Schedule.*

items and a number of well validated self-report measures. The 12-item version of the General Health Questionnaire (GHQ-12) was used as a measure of current psychological distress and was scored using the Likert method.[21] The Illness Attitude Scales are measures of attitudes and concerns about illness;[22] we used Speckens *et al*'s two sub-scales of the Illness Attitude Scales because they were derived from general practice samples.[23] The Health Anxiety sub-scale has 11 items and includes questions enquiring about fear of serious illness, worry about symptoms, fear of death, and response to bodily symptoms. The Illness Behaviour sub-scale has six items, and includes questions about healthcare use with different doctors, and the extent to which symptoms interfere with life, reduce concentration, and impair enjoyment of life. Higher scores on both scales indicate more negative illness attitudes. A somatic symptom scale validated in primary care settings was used as a brief measure of the propensity to report somatic symptoms.[24] A measure of fatigue symptoms was also included,[25] as was a functional assessment of disability (the Self-Care Assessment Schedule [SCAS])[26] as assessed by the frequency of self-care behaviours during the previous 2 weeks.

Statistical analysis

We used simple non-parametric statistics to investigate the relationship between gender, the number of consultations, and the questionnaire variables. For the multivariate models we used negative binomial regression analysis[27] to identify the best independent predictors of consultation for men and women separately. This method is particularly useful for analysing counts where there may be unexplained variation between individuals and has been used previously to examine the association between socioeconomic factors and consultation behaviour in primary care.[2] The predictors were chosen using stepwise selection.

We used negative binomial regression analysis in conjunction with a time series approach to analysis in order to construct longitudinal models of consultation using all available questionnaire data. This method takes into account both inter-individual and intra-individual variation over time. For each subject we entered into the regression model mean values for predictor variables as well as change scores for each variable. Variables were selected for the final model using stepwise methods. The main outcome variable for the longitudinal analysis was the total number of consultations over the 5 years of the study.

In the multivariate models, associations were expressed as incidence rate ratios. For categorical variables this represented the relative increase in consultation for each category compared with a reference group (for example, single status was used as the reference group for marital status). The scoring range for many of the continuous variables was fairly wide. For continuous variables the incidence rate ratio was, therefore, expressed as the relative increase in consultation per 5- or 10-unit change of the continuous variable. SPSS version 10.1 was used for the descriptive analyses and STATA version 6.1 was used to generate the regression models.

Even if the multivariate analyses described above produced different models for the sexes, they would give little indication of whether the variables predicting consultation rate were significantly different in men and women. We therefore checked our results by examining the interaction between gender and the predictors of consultation for the sample as a whole.

As women consult for routine purposes (such as those related to contraception and pregnancy) more than men[9] we repeated all analyses excluding such consultations.

RESULTS

Of the 800 subjects randomly selected from the original cohort, questionnaire and consultation data were available for 738 (92%). The sample comprised 445 women and 293 men. These patients together accounted for 12 182 consultations during the study period. The 738 subjects included in the study were slightly older than the 62 subjects not included (median age [interquartile range, IQR] = 52 years [24–61 years] versus 46.5 [33–64], P = 0.09, Mann–Whitney U test), and more likely to be married or cohabiting (proportion married 76% versus 48%, P<0.003, ^{2} test). The proportions of female subjects was similar in the two groups (60% versus 63%, P = 0.33, ^{2} test).

Associations between variables at baseline

Table 1 shows the associations between gender and baseline demographic, questionnaire, and consultation variables. Men were more likely than women to be single, working full time, or not working due to ill health; women were more likely to be working in the home. The levels of chronic illness were similar in the two groups, as were the levels of psychological distress as measured by the GHQ-12. Women were more likely to report somatic symptoms and had more negative illness attitudes but had lower levels of self-reported disability (as measured by the SCAS). They consulted twice as often as men during the first year of the study, even when routine consultations were excluded.

Multivariate models of consultation

Table 2 shows multivariate models for the association between baseline variables and consultation during the subsequent year.

Negative illness attitudes (IAS illness behaviour), the presence of chronic physical or psychiatric illness, psychological distress (as measured by the GHQ-12), and the number of somatic symptoms (Somatic symptom score) made independent contributions to consultation behaviour in women, and together resulted in the best overall model of consultation.

Negative illness attitudes (IAS illness behaviour, IAS health anxiety), the tendency to report somatic symptoms (Somatic symptom score), and chronic physical illness made independent contributions to consultation behaviour in men and together resulted in the best overall model of consultation. When we checked the interaction between gender and the predictors of consultation rate, we found that the interaction terms were significant (P<0.05) for illness attitudes, chronic psychiatric disorder, and somatic symptoms, but not for the other variables. This suggested that psychiatric disorder was a more important determinant of consultation in women, and that illness attitudes and somatic symptoms were more important determinants of consultation in men.

Table 2. Stepwise negative binomial regression model for the association between baseline variables and consultations during the following year for men and women.

Variable	Incidence rate ratio (95% CI)	Z	*P*-value
Females			
IAS illness behaviour	1.71 (1.37 to 2.11)	4.816	<0.001
Physical chronic illness[a]	1.72 (1.44 to 2.05)	5.999	<0.001
GHQ-12	1.21 (1.05 to 1.38)	2.583	<0.01
Psychiatric chronic illness[a]	1.45 (1.12 to 1.87)	2.849	0.004
Somatic symptom score	1.45 (1.09 to 4.04)	2.229	0.026
Males			
IAS illness behaviour	2.32 (1.74 to 3.11)	5.725	<0.001
Somatic symptom score	2.88 (1.57 to 5.28)	3.415	0.001
Physical chronic illness[a]	1.39 (1.06 to 1.81)	2.389	0.017
IAS health anxiety	1.23 (1.02 to 1.49)	2.199	0.028

[a]no chronic illness as reference group. GHQ-12 = 12 item version of the General Health Questionnaire. IAS = Illness Attitude Scale. Associations are expressed as incidence rate ratios. For categorical variables the relative increase in consultation is expressed in relation to a reference group. For continuous variables the incidence rate ratio has been expressed as the relative increase in consultation per 10-unit change of the continuous variable (5-unit change for the Somatic Symptom Scale). The potential scoring range for continuous variables: GHQ-12 0–36 , IAS health anxiety 0–44, IAS illness behaviour, somatic symptom score 0-7, age 23–71 year).

The stepwise models at 1 year and 3 years involved similar predictor variables. Excluding routine consultations made no difference to the models.

Table 3 shows the longitudinal models of consultation. Negative illness attitudes, chronic physical and psychiatric illness, increases in psychological distress (as measured by changes in the GHQ-12 score between baseline and 3-year follow up), and age made independent contributions to the prediction of consultation behaviour in women over the 5 years of the study, and together resulted in the best overall longitudinal model of consultation. Negative illness attitudes, age, and chronic physical illness made independent contributions to the prediction of consultation behaviour in men over the 5 years of the study and together resulted in the best overall longitudinal model of consultation.

When we checked the interaction between gender and the predictors of consultation rate, we found that the interaction terms were significant (P<0.05) for illness attitudes, changes in psychological distress, and age. This suggested that changes in psychological distress were more important

Table 3. Longitudinal models of consultation for men and women.[a]

Variable	Incidence rate ratio (95% CI)	Z	*P*-value
Females			
Mean IAS illness behaviour	2.10 (1.79 to 2.43)	9.509	<0.001
Physical chronic illness[a]	1.57 (1.37 to 1.80)	6.385	<0.001
Psychiatric chronic illness[a]	1.39 (1.16 to 1.67)	0.132	0.001
Change GHQ-12	1.10 (1.04 to 1.17)	3.147	0.002
Age	1.05 (1.01 to 1.10)	2.008	0.045
Males			
Mean IAS illness behaviour	3.05 (2.50 to 3.74)	11.057	<0.001
Age	1.16 (1.07 to 1.24)	3.852	<0.001
Physical chronic illness[b]	1.29 (1.06 to 1.57)	2.485	0.013

[a]This table shows the association between questionnaire variables and the number of consultations over the 5 years of the study. [b]no chronic illness as reference group. GHQ-12 = 12 item version of the General Health Questionnaire. IAS = Illness Attitude Scale.

longitudinal determinants of consultation in women, and illness attitudes and age were more important longitudinal determinants of consultation in men. Excluding routine consultations made no difference to the model.

DISCUSSION

We found that different models of consultation seemed to be applicable to men and women. Psychiatric chronic illness and psychological distress were more strongly associated with consultation in women than in men; current somatic symptoms and cognitive factors (illness attitudes related to illness behaviour and health anxiety) were more strongly associated with consultation in men than in women, despite women reporting more physical symptoms and negative illness attitudes overall.

Slightly different predictor variables were identified by the cross-sectional and longitudinal models. This may simply reflect the larger number of predictor variables and outcome events over 5 years. What is interesting is the similarity between the models (Tables 2 and 3). The 5-year longitudinal models are probably more robust because they seek to model consultation behaviour over an extended period.

The findings with respect to the role of psychological distress are consistent with previous cross-sectional studies in general practice in the UK,[8,9] but, to our knowledge, the role of physical symptoms and cognitive factors has not been investigated in this way before.

Strengths and weaknesses of the study

Carrying out the study at a single practice with four full-time partners in a relatively affluent suburb in the UK may have limited the generalisability of the findings. The results need to be replicated in a wider variety of settings. The practice population was a relatively stable one with 80% of patients at the practice remaining registered throughout the study period, but our findings may not be applicable to the minority of individuals who changed practices.

Although our follow-up rate was high, non-response bias might also have been a problem. Our sample was older, and more likely to be in a stable relationship than the patients registered at the practice as a whole. As the current study was an investigation of patient factors, we did not consider the role of the organisational or doctor-related factors (such as appointment systems, distance from the surgery and physician attitudes), which may also be important determinants of consultation.[1]

Implications for practice and research

Our findings suggest the determinants of consultation in primary care are different for men and women. Factors related to psychological distress were more important in women than in men, whereas physical symptoms and cognitive factors were more important in men than in women. A fuller understanding of the reasons for consultation may enable primary care doctors to better help individual patients.[6]

Such understanding might also contribute more generally to the development of interventions for those who consult unusually frequently. If our models are correct, we would hypothesise that interventions for mood disorder might have a greater effect on consultation rates in women than in men. Based on our models, we would also hypothesise that interventions that are symptom-focused or cognitively-based (such as symptom re-attribution[28]) might reduce consultation rates in men to a greater degree than they would in women. However, this whole area of research raises a number of difficult conceptual issues. For example, even in those who attend frequently, consultation cannot always be regarded as an 'adverse outcome'.[29] In other words, reductions in consultation may not always be a valid goal. There is also a question about how effective simple interventions can be in reducing consultations in individual patients. Indeed, some studies would suggest that interventions actually increase consultation rates in the short term.[30]

Our findings may also have implications for the treatment of mood disorder in men. As with previous studies, we found that despite significant levels of psychological distress, men were less likely than women to consult their doctors.[15,31] A recent psychological autopsy study of 100 suicides in southwest England found that men were less likely to have consulted their GP in the month prior to the suicide than women.[32] Gender differences in consulting may account for gender differences in

suicidal behaviour. The suicide rate for men in Manchester was three times that for women during the study period.[33] It may be that social norms and gender role expectations prevent appropriate help seeking in men when they are psychologically distressed[15] and make it more likely that they will reach a crisis point.[31] Innovative programmes of education targeted at high risk groups (for example, Campaign against Living Miserably [www.thecalmzone.net/Home]) may be one solution to improving access but, as yet, there is little evidence for the effectiveness of such strategies.

Future research should consider gender-specific consulting behaviour in a variety of different settings. Studies might also take into account physician, practice, and societal factors when attempting to construct models of consultation. Qualitative work to date has not focused on gender differences[34] but future qualitative studies could help to clarify the different mechanisms operating in men and women's decisions to consult their GP.

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None

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REFERENCES

1. Campbell SM, Roland MO. Why do people consult the doctor? *Fam Pract* 1996; **13(1):** 75–83.
2. Carr-Hill RA, Rice N, Roland M. Socioeconomic determinants of rates of consultation in general practice based on fourth national morbidity survey of general practices. *BMJ* 1996; **312:** 1008–1012.
3. Scaife B, Gill P, Heywood P, Neal R. Socio-economic characteristics of adult frequent attenders in general practice: secondary analysis of data. *Fam Pract* 2000; **17(4):** 298–304.
4. Baez K, Aiarzaguena JM, Grandes G, *et al.* Understanding patient-initiated frequent attendance in primary care: a case-control study. *Br J Gen Pract* 1998; **48:** 1824–1827.
5. Bellon JA, Delgado A, Luna JD, Lardelli P. Psychosocial and health belief variables associated with frequent attendance in primary care. *Psychol Med* 1999; **29(6):** 1347–1357.
6. Little P, Somerville J, Williamson I, *et al.* Psychosocial, lifestyle and health status variables in predicting high attendance among adults. *Br J Gen Pract* 2001; **51**: 987–994.
7. Meininger JC. Sex differences in factors associated with use of medical care and alternative illness behaviors. *Soc Sci Med* 1986; **22(3):** 289–292.
8. Briscoe ME. Why do people go to the doctor? Sex differences in the correlates of GP consultation. *Soc Sci Med* 1987; **25(5):** 507–513.
9. Corney RH. Sex differences in general practice attendance and help seeking for minor illness. *J Psychosom Res* 1990; **34(5):** 525–534.
10. Hansen MS, Fink P, Frydenberg M, Oxhoj ML. Use of health services, mental illness and self-rated disability and health in medical inpatients. *Psychosom Med* 2002; **64(4):** 668–675.
11. Waldron I. Sex differences in illness incidence, prognosis and mortality: issues and evidence. *Soc Sci Med* 1983; **17(16):** 1107–1123.
12. Pini S, Piccinelli M, Zimmermann-Tansella C. Social problems as factors affecting medical consultation: a comparison between general practice attenders and community probands with emotional distress. *Psychol Med* 1995; **25(1):** 33–41.
13. van Wijk CM, Kolk AM. Sex differences in physical symptoms: the contribution of symptom perception theory. *Soc Sci Med* 1997; **45(2):** 231–246.
14. Verbrugge LM. The twain meet: empirical explanations of sex differences in health and mortality. *J Health Soc Behav* 1989; **30(3):** 282–304.
15. Moller-Leimkuhler AM. Barriers to help-seeking by men: a review of sociocultural and clinical literature with particular reference to depression. *J Affect Disord* 2002; **71(1-3):** 1–9.
16. Macfarlane GJ, Morris S, Hunt IM, *et al.* Chronic widespread pain in the community: the influence of psychological symptoms and mental disorder on healthcare seeking behavior. *J Rheumatol* 1999; **26(2):** 413–419.
17. Kapur N, Hunt I, Lunt M, *et al.* Psychosocial and illness related predictors of consultation rates in primary care — a cohort study. *Psychol Med* 2004; **34(4):** 719–728.
18. Morris JK, Cook DG, Walker M, Shaper AG. Non-consulters and high consulters in general practice: cardio-respiratory health and risk factors. *J Public Health Med* 1992; **14(2):** 131–137.
19. Heywood PL, Blackie GC, Cameron IH, Dowell AC. An assessment of the attributes of frequent attenders to general practice. *Fam Pract* 1998; **15(3):** 198–204.
20. World Health Organisation. *The International Statistical Classification of Diseases and Related Health Problems — 10th Revision.* Geneva: World Health Organization, 2003. http://www3.who.int/icd/vol1htm2003/fr-icd.htm (accessed 9 Dec 2004).
21. Goldberg DP. *The detection of psychiatric illness by questionnaire.* London: Oxford University Press, 1972.
22. Kellner R, Abbott P, Winslow WW, Pathak D. Fears, beliefs and attitudes in DSM-III hypochondriasis. *J Nerv Ment Dis* 1987; **175(1):** 20–25.
23. Speckens AE, Spinhoven P, Sloekers PP, *et al.* A validation study of the Whitely Index, the Illness Attitude Scales, and the Somatosensory Amplification Scale in general medical and general practice patients. *J Psychosom Res* 1996; **40(1):** 95–104.
24. Othmer E, DeSouza C. A screening test for somatization disorder (hysteria). *Am J Psychiatry* 1985; **142(10):** 1146–1149.
25. Chalder T, Berelowitz G, Pawlikowska T, *et al.* Development of a fatigue scale. *J Psychosom Res* 1993; **37(2):** 147–153.
26. Barnes D, Benjamin S. The Self Care Assessment Schedule (SCAS)—I. The purpose and construction of a new assessment of self care behaviours. *J Psychosom Res* 1987; **31(2):** 191–202.
27. Long JS. *Regression models for categorical and limited dependent variables.* Thousand Oaks: Sage Publications, 1997.
28. Morriss R, Gask L, Ronalds C, *et al.* Cost-effectiveness of a new treatment for somatized mental disorder taught to GPs. *Fam Pract* 1998; **15(2):** 119–125.
29. Neal R, Dowell A, Heywood P, Morley S. Frequent attenders: who needs treatment? *Br J Gen Pract* 1996; **46:** 131–132.
30. Simon GE, Manning WG, Katzelnick DJ, *et al.* Cost-effectiveness of systematic depression treatment for high utilizers of general medical care. *Arch Gen Psychiatry* 2001; **58(2):** 181–187.
31. Biddle L, Gunnell D, Sharp D, Donovan JL. Factors influencing help seeking in mentally distressed young adults: a cross sectional survey. *Br J Gen Pract* 2004; **54:** 248–253.
32. Owens C, Lloyd KR, Campbell J. Access to health care prior to suicide: findings from a psychological autopsy study. *Br J Gen Pract* 2004; **54:** 279–281.
33. Appleby L, Shaw J, Sheratt J, *et al. Safety first: five year report of the national confidential inquiry into suicide and homicide by people with mental illness.* London: Department of Health, 2001.
34. Neal RD, Heywood PL, Morley S. 'I always seem to be there' — a qualitative study of frequent attenders. *Br J Gen Pract* 2000; **50:** 716–723.