# GP frequent attendance in Liverpool and Granada: the impact of depressive symptoms

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*SUMMARY*

***Background.*** *Frequent attendance in general practice increases workload and affects doctor–patient relationships. It is a complex phenomenon, but patients' psychological problems appear to be important.*

***Aim.*** *To assess whether frequent attendance is more likely to be associated with depressive symptoms than with physical health problems.*

***Method.*** *The study was carried out in two general practices: one in Liverpool and one in Granada. Subjects comprised 127 frequent attenders (FAs) plus 175 matched controls, stratified by age and sex. Measures included demographic factors, Beck Depression Inventory (BDI), self-reported health, and current health problems classified by ICHPPC-2 criteria.*

***Results.*** *Seventy-five (59%) FAs had a BDI score 613, compared with 9 (5%) controls (odds ratio [OR] = 26.6, 95% confidence interval [CI] = 12.4 to 56.8, P<0.001). A total of 136 (78%) controls reported their health to be good or excellent, compared with 40 (31%) FAs (OR = 7.6, 95% CI = 4.5 to 12.7, P<0.001). Respiratory problems were present in 50 (39%) FAs and 47 (27%) controls ($c^2$ = 6.992, P<0.03). Depression rates were similar in Liverpool and Granada, although Liverpool subjects were less likely to report good health. On logistic regression, BDI status was the major predictor of frequent attendance (OR = 17.18, 95% CI = 7.54 to 39.01). Self-reported ill health (OR = 2.67, 95% CI = 1.40 to 5.10) and respiratory problems (OR = 2.20, 95% CI = 1.11 to 4.37) were also associated with frequent attendance.*

***Conclusion.*** *Depressive symptoms were the major predictor of frequent attendance in this study. Clinical and research activity should therefore concentrate on the identification and management of psychological problems among FAs in general practice.*

***Keywords:*** *depression; frequent attendance; primary care; UK; Spain.*

## Introduction

PATIENTS who frequently consult their general practitioners (GPs) generate an enhanced workload for primary care[1] and often find themselves in dysfunctional doctor–patient relationships.[2] The proportion of patients attending frequently appears to be increasing.[3]

Frequent attendance is a complex phenomenon involving the characteristics and expectations of family doctors and the physical and psychosocial needs of patients.[4-8] Anderson and Newman[9] postulate the existence of individual and social determinants of health care use, including predisposing factors (demographic, social structure, and beliefs), enabling factors (economic or spatial accessibility), and illness level (perceived or evaluated) factors. However, this model may explain less than 20%,[10-12] and at most 50%, of the variance in attendance rates.[13] Professional and organisational factors are also important.[14]

In this study, the extent to which specific patient factors explain variation in attendance is examined. Given evidence of associations between psychological problems and frequent attendance[15-19] and knowledge that depressive disorders are the most common psychological problems presented in primary care,[20] we focus on current depressive symptoms as a discrete explanatory variable and compare these with current health problems and personal health status, as defined by doctors and patients respectively. We also make the first direct comparison of frequent attendance trends between patients in England and Spain.

The research questions were defined as follows:

- Do patients who frequently consult their GPs have higher rates of depressive symptoms, self-reported ill health, or physical health problems than those who consult with average or less than average frequency?
- Do reasons for frequent consultation vary between general practice patients in England and Spain?
- To what extent are depressive symptoms a superior predictor of frequent attendance than other variables of interest?

## Method

The study was undertaken among patients registered with a general practice in Liverpool, England, and a health centre in Granada, Spain. The Liverpool practice serves some 10 500 patients, with seven GPs. The Granada health centre serves a population of some 24 000, attended by 10 family physicians and four primary care paediatricians. In both centres the doctors work as a group with extensive primary care teams. Despite discrepancies in health care organisation between the United Kingdom and Spain,[21] the important similarities are that patients do not pay directly for the service (hence have no financial constraints on consultation), and that the doctors in both centres employ biopsychosocial models of care.[22]

In defining frequent attendance, studies have used tertiles,[23] quartiles,[4] or generic cut-off figures.[24-26] Given that consultation rates may be practice specific and tend to increase with age among adults, we identified our sample of frequent attenders (FAs) with reference to mean annual consultation rates in each practice, stratified by sex and age; without such stratification, samples may be biased towards elderly patients and women.[27] We defined frequent attendance as an annual rate of consultation at least twice as high as the practice sex- and age-related mean. Controls were defined as patients who had consulted at or below the practice sex- and age-related mean (Table 1.)

We did not wish to limit our investigation to 'heartsink' patients,[2] but were interested in frequent attendance as a global concept. We included patient- and doctor-initiated consultations, telephone contacts, and home visits; we excluded routine antenatal contacts, which overestimate health care problems for

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Submitted: 25 February 1999; final acceptance: 13 August 1999.

**Table 1.** Mean annual attendance rates, used to determine frequent attender (FA) and control groups: Liverpool and Granada.

| | Liverpool | | Granada | |
|---|---|---|---|---|
| | Mean (SD) | FA cut-off | Mean (SD) | FA cut-off |
| Females aged 16–34 years | 4.5 (2.7) | 9 | 2.8 (3.0) | 6 |
| Females aged 35–54 years | 4.8 (3.4) | 10 | 5.7 (5.0) | 11 |
| Females aged over 54 years | 3.8 (3.5) | 8 | 8.3 (6.1) | 17 |
| Males aged 16–34 years | 2.0 (2.4) | 4 | 2.7 (3.0) | 5 |
| Males aged 35–54 years | 3.8 (4.1) | 8 | 4.2 (4.9) | 8 |
| Males aged over 54 years | 4.8 (3.6) | 10 | 6.7 (5.6) | 13 |

women.

In Liverpool, patients consulting with all the GPs were eligible to take part in the study, and each doctor received a matrix to assist with identification of FAs and controls. In Granada, recruitment was limited to patients consulting with one of the authors (JAB).

During the study period, participating doctors reviewed consulting patients' clinical records and counted contacts during the previous year. Patients falling into one of the age- and sex-related categories of frequent attendance or control were informed that the practice was conducting a study into why people attended their family doctor and were invited to take part. They were asked to describe their own health on a five-point scale ranging from 'excellent' to 'poor'. The participants were invited to complete the Beck Depression Inventory (BDI) and a self-rated item on current health status, and return the form to reception. Doctors noted the patients' identifying numbers for later analysis of medical records.

The BDI is a 21-item, self-rating questionnaire with international (including Spanish) validity for detecting the presence and severity of depressive symptoms.[28-31] A score of 13 has been validated as a proxy measure for depressive caseness in non-psychiatric settings.[32-33] Medical records were later examined by the authors. A standard proforma was used, including sociodemographic data, consultation rate during the previous year, BDI score, and up to 15 current health problems identified from the written medical records and categorised according to WONCA's International Classification of Health Problems in Primary Care (ICHPPC-2).[34] ICHPPC-2 has 12 categories for physical health problems, and others for psychological, general health, and social problems. Data collection took place between October 1997 and March 1998.

The proforma items were entered onto a database for analysis using SPSS/PC version 8.0. Quantitative variables were assessed for skewness and transformed if necessary using Tukey's criteria.[35] Logarithm transformation was undertaken for BDI scores and number of visits, and square-root transformation for number of health problems. Analyses included Student's *t*-test, chi-squared test, Fisher's exact tests, and odds ratios (ORs). The dependent variable frequent attendance was used to obtain a multiple logistic regression model. Variables were included or excluded from the model by forward stepwise selection, with an entrance *P*-value of 0.15 and an exit *P*-value of 0.20.

## Results

We invited 302 patients to take part in the survey; all agreed and provided full datasets. Of these, 127 were FAs. Their mean consultations in the previous year was 12.7 (95% confidence interval [CI] = 11.6 to 13.8) compared with 3.7 (95% CI = 3.3 to 4.1) for 175 controls. A total of 121 (40%) patients were male. The mean age was 45.6 years, 63% were married, and 69% were from social classes III or IV. Details of the sample, grouped by attender status and site, are given in Table 2.

### *Sociodemographic factors*

Frequent attenders were more likely than controls to be female (93/127 versus 88/175, OR = 2.70, 95% CI = 1.65 to 4.42, $P<0.001$), widowed or divorced (23/127 versus 17/175, OR = 2.05, 95% CI = 1.05 to 4.03, $P = 0.0508$), and from social class V (28/127 versus 15/175, OR = 3.01, 95% CI = 1.54 to 5.93, $P<0.001$). There were no significant differences in age or years of education.

### *Depressive symptoms*

The mean BDI score for FAs was 16.6 (95% CI = 14.8 to 18.4), compared with 3.7 (95% CI = 3.1 to 4.3) for controls: Student's $t = 16.46$, $P<0.001$. In total, 75 (59%) FAs had a BDI score of 13 or above, compared with nine (5%) controls (OR = 26.6, 95% CI = 12.4 to 56.8, $P<0.0001$).

### *Self-reported health*

Frequent attenders were much less likely than controls to report excellent or good health, and much more likely to consider that their health was 'so-so' or 'poor' (Table 2). In total, 136 (78%) controls reported their health to be good or excellent, compared with 40 (31%) FAs (OR = 7.6, 95% CI = 4.5 to 12.7, $P<0.001$).

### *Physical health problems*

The mean number of current health problems recorded in the patients' records was 4.5 (95% CI = 4.0 to 5.0) for the FA group, compared with 2.69 (95% CI = 2.4 to 3.0) for controls: Student's $t = 6.594$, $P<0.001$.

Table 3 shows the relationship between user status (FA versus control) and ICHPPC-2 morbidity. Each category was subdivided into no/one/two or more cases, and differences were assessed using chi-squared tests. The seven categories in which differences reached standard levels of significance were: psychological, social, respiratory, female genital, nervous disorders, digestive disorders, and skin conditions.

### *Liverpool and Granada*

A total of 103 (34%) patients were from Liverpool and 199 (66%) from Granada. There were statistically significant differences between four sociodemographic items. Liverpool patients had a mean age of 43 years (95% CI = 39 to 46) and usually completed their education at age 16; 12 (12%) were separated or divorced, and 69 (67%) were from social class II or III. Granada patients were older, with a mean age of 47 years (95% CI = 45 to 50), and usually completed their education two years earlier; only three (2%) were separated or divorced, and 130 (65%) were from social class IV (Table 2).

**Table 2.** Frequent attenders (FAs) and controls in United Kingdom and Spain: sociodemographic and health status.

| | United Kingdom (Liverpool) | | | Spain (Granada) | | |
|---|---|---|---|---|---|---|
| Variables | FAs (n = 49) n (%) | Controls (n = 54) n (%) | Total (n = 103) n (%) | FAs (n = 78) n (%) | Controls (n = 121) n (%) | Total (n = 199) n (%) |
| Group | 49 (47.6) | 54 (52.4) | 103 (34.1) | 78 (39.2) | 121 (60.8) | 199 (65.9) |
| Sex | | | | | | |
| Male | 13 (26.5) | 25 (46.3) | 38 (36.9) | 21 (26.9) | 62 (51.2) | 83 (41.7) |
| Female | 36 (73.5) | 29 (53.7) | 65 (63.1) | 57 (73.1) | 59 (48.8) | 116 (58.3) |
| Marital status | | | | | | |
| Single | 13 (26.5) | 19 (35.2) | 32 (31.1) | 19 (24.4) | 22 (18.2) | 41 (20.6) |
| Married | 26 (53.1) | 27 (50.0) | 53 (51.1) | 46 (59.0) | 90 (74.4) | 136 (68.3) |
| Widowed | 3 (6.1) | 3 (5.6) | 6 (9.8) | 11 (14.1) | 8 (6.6) | 19 (9.5) |
| Separated/divorced | 7 (14.3) | 5 (9.3) | 12 (11.7) | 2 (2.6) | 1 (0.8) | 3 (1.6) |
| Social class | | | | | | |
| I | 0 (0.0) | 2 (3.7) | 2 (1.9) | 2 (2.6) | 2 (1.7) | 4 (2.0) |
| II | 11 (22.4) | 18 (33.3) | 29 (28.2) | 5 (6.4) | 6 (5.0) | 11 (5.5) |
| III | 20 (40.8) | 20 (37.0) | 40 (38.8) | 2 (2.6) | 14 (11.6) | 16 (8.0) |
| IV | 9 (18.4) | 13 (24.1) | 22 (21.4) | 48 (61.5) | 82 (67.8) | 130 (65.3) |
| V | 9 (18.4) | 1 (1.9) | 10 (9.7) | 19 (24.4) | 14 (11.6) | 33 (16.6) |
| VI | 0 (0.0) | 0 (0.0) | 0 (0.0) | 2 (2.6) | 3 (2.5) | 5 (2.5) |
| Self-reported health | | | | | | |
| Excellent | 0 (0.0) | 6 (11.1) | 6 (5.8) | 0 (0.0) | 1 (0.8) | 1 (0.5) |
| Good | 9 (18.4) | 35 (64.8) | 44 (42.7) | 31 (39.7) | 94 (77.7) | 125 (62.8) |
| Neither good nor bad | 16 (32.7) | 11 (20.4) | 27 (26.2) | 9 (11.5) | 6 (5.0) | 15 (7.5) |
| 'So-so' | 15 (30.6) | 2 (3.7) | 17 (16.5) | 24 (30.8) | 19 (15.7) | 43 (21.6) |
| Poor | 9 (18.4) | 0 (0.0) | 9 (8.7) | 14 (17.9) | 1 (0.8) | 15 (7.5) |
| Depression | | | | | | |
| BDI ≥13 | 29 (59.2) | 6 (11.1) | 35 (34.0) | 46 (59.0) | 3 (2.5) | 49 (24.6) |
| BDI <13 | 20 (40.8) | 48 (88.9) | 65 (66.0) | 32 (41.0) | 118 (97.5) | 150 (75.4) |
| | Mean (95% CI) | Mean (95% CI) | Mean (95% CI) | Mean (95% CI) | Mean (95% CI) | Mean (95% CI) |
| Age (in years) | 43.0 (38.5–47.6) | 42.3 (37.3–47.3) | 42.6 (39.3–45.6) | 48.0 (43.9–52.1) | 46.4 (43.2–49.6) | 47.0 (44.5–49.6) |
| Education years | 15.5 (15.0–16.0) | 16.1 (15.5–16.7) | 15.8 (15.4–16.2) | 13.1 (11.7–14.6) | 14.1 (13.1–15.1) | 13.7 (12.9–14.6) |
| Number of health problems | 2.7 (2.4–3.1) | 1.6 (1.4–1.7) | 2.1 (1.9–2.3) | 5.6 (4.9–6.3) | 3.2 (2.7–3.6) | 4.1 (3.7–4.6) |
| Number of visits last year | 13.2 (10.5–15.8) | 2.5 (2.1–2.8) | 7.6 (5.9–9.2) | 12.4 (11.6–13.3) | 4.2 (3.7–4.8) | 7.5 (6.7–8.2) |

**Table 3.** Relationship between FA status and morbidity.[a]

| | Frequent attenders n (%) | | | Controls n (%) | | | | |
|---|---|---|---|---|---|---|---|---|
| Variables | Neither | One | Two or more | Neither | One | Two or more | Chi-squared test for trend | P-value |
| Blood | 118 (92.9) | 9 (7.1) | 0 (0.0) | 169 (96.6) | 6 (3.4) | 0 (0.0) | 1.383[d] | 0.240 |
| Circulation | 78 (61.4) | 34 (26.8) | 15 (11.8) | 126 (72.0) | 34 (19.4) | 15 (8.6) | 3.164 | 0.075 |
| Digestive | 84 (66.1) | 25 (19.7) | 18 (14.2) | 130 (74.3) | 34 (19.4) | 11 (6.3) | 4.390 | 0.036 |
| Endocrine | 83 (65.4) | 32 (25.2) | 12 (9.4) | 132 (75.4) | 26 (14.9) | 17 (9.7) | 1.646 | 0.199 |
| Eye | 117 (90.1) | 9 (7.1) | 1 (0.8) | 161 (92.0) | 12 (6.9) | 2 (1.1) | 0.017 | 0.897 |
| General | 100 (78.7) | 22 (17.3) | 5 (3.9) | 159 (90.9) | 15 (8.6) | 1 (0.6) | 10.009 | 0.002 |
| Genital female[b] | 60 (64.5) | 27 (29.0) | 6 (6.5) | 70 (79.5) | 16 (18.2) | 2 (2.3) | 5.385 | 0.020 |
| Genital male[c] | 33 (97.1) | 1 (3.9) | 0 (0.0) | 79 (90.8) | 8 (9.2) | 0 (0.0) | 0.629[d] | 0.428 |
| Nervous | 98 (77.2) | 26 (20.5) | 3 (2.4) | 154 (88.0) | 18 (10.3) | 3 (1.7) | 5.069 | 0.024 |
| Hearing | 116 (91.3) | 8 (6.3) | 3 (2.4) | 162 (92.6) | 13 (7.4) | 0 (0.0) | 0.936 | 0.333 |
| Psychological | 44 (34.6) | 40 (31.5) | 43 (33.9) | 118 (67.4) | 46 (26.3) | 11 (6.3) | 45.492 | <0.001 |
| Musculoskeletal | 76 (59.8) | 42 (33.1) | 9 (7.1) | 119 (68.0) | 45 (25.7) | 11 (6.3) | 1.565 | 0.211 |
| Skin | 97 (76.4) | 24 (18.9) | 6 (4.7) | 151 (86.3) | 22 (12.6) | 2 (1.1) | 6.175 | 0.013 |
| Social | 97 (76.4) | 23 (18.1) | 7 (5.5) | 161 (92.0) | 12 (6.9) | 2 (1.1) | 14.348 | <0.001 |
| Urinary | 109 (85.8) | 15 (11.8) | 3 ( 2.4) | 158 (90.3) | 14 (8.0) | 3 (1.7) | 1.218 | 0.270 |
| Respiratory | 77 (60.6) | 36 (28.3) | 14 (11.0) | 128 (73.1) | 39 (22.3) | 8 (4.6) | 6.862 | 0.009 |

Total = 302: frequent attenders = 127 and control group = 175. [a]ICHPPC-2 classification; [b]includes pregnancy, birth, family planning, and genital problems: n = 181 females; [c]n = 121 males. [d]Pearson's chi-square.

The numbers of primary care contacts were similar among the two groups: the mean in Liverpool was 7.6 (95% CI = 6.0 to 9.2), and 7.5 in Granada (95% CI = 6.8 to 8.2). Liverpool patients were less likely than Granada patients to have a BDI score of 13 or above: 65 (64%) compared with 150 (75%); $\chi^2 = 2.512$, $P = 0.113$. Liverpool patients had a mean of 2.1 (95% CI = 1.9 to 2.3) recorded health problems, compared with a mean of 4.3 (95% CI = 3.7 to 4.6) in Granada; Student's $t = -7.468$, $P<0.001$. However, only 50 (49%) Liverpool patients reported their health to be good or excellent, compared with 126 (63%) in Granada (OR = 0.54, 95% CI = 0.34 to 0.88, $P = 0.0190$).

### *Relative importance of depressive symptoms in predicting frequent attendance*

A stepwise forward multiple logistic regression model was developed, with frequent attendance as the dependent variable. All variables in the study were entered and Table 4 shows the final step in this model. The number of health problems and sex were no longer significant at this stage. Poor self-reported health and the presence of one or more respiratory problems were twice as common among FAs than controls. A BDI score of 13 or above emerged as the most powerful explanatory variable. Patients with a BDI score above cut-off were over 17 times more likely to be FAs than controls, taking other factors into account.

## Discussion

There is, as yet, no agreement on the most appropriate method of defining frequent attendance. While a continuous approach confers a greater likelihood of obtaining statistically significant results and may avoid potential classification errors between 'cases' and 'non-cases',[36] we considered the dichotomous approach to be more appropriate. As with hypertension, although any given threshold figures are, to some extent, arbitrary, their presence has the effect of concentrating the mind; in the case of the clinician, on the need for some positive action, and in the case of the researcher, on the need for more focused enquiry into avoidable causes and consequences.

To our knowledge, this is the first study to examine the specific relationship between depressive symptoms and frequent attendance, comparing trends in different European countries using a common methodology. We found that frequent attendance was highly likely to be associated with current depressive symptoms. We also found associations of frequent attendance with patients' reports of indifferent or poor health and with the presence of respiratory problems noted by family doctors. Despite sociodemographic differences between the patients in Liverpool and Granada, frequent attendance trends and rates of depression were similar. Granada patients had more recorded health problems but better self-reported health than their counterparts in Liverpool. This discrepancy may relate to differing styles of recording health problems between the doctors in the Liverpool and Granada practices. It might also be a function of cultural or social class differences between the two patient populations. Patients from a higher social class may expect better health and, therefore, are more likely to perceive a given set of experiences as symptoms of illness.

Our main finding was that depressive symptoms were strongly associated with frequent attendance. Before accepting the validity of this association, it is important to consider the possibilities for systematic bias within the study design. First, the fact that both practices tended to work to biopsychosocial models may have meant that a higher proportion of cases of depression was noted and followed up than in other practices that adopt a more biomedical approach. The fact that medical record of psychological problems did not significantly predict frequent attendance in our multivariate analysis reduces this potential bias, although there is evidence elsewhere that undetected mental illness is associated with frequent attendance.[37]

Secondly, in this study we did not differentiate between patient- and doctor-initiated frequent attendance, since, in our experience, it is difficult to make such categorical judgements of doctor–patient relationships in which mutual expectations may have built up over many years. However, this does mean that we may make only provisional comparisons of our results with those from the Basque study of patient-initiated frequent attendance,[6] which found mental disorder to be a less powerful explanatory variable than either chronic physical illness or life stress.

Thirdly, the investigators were not blind to frequent attendance status or BDI score when assigning ICHPPC-2 categories from the medical records, which may have biased our categorisation of physical health problems.

Further research is needed in this field in order to examine the association between frequent attendance and depressive symptoms in a larger number of practices and among doctors with a range of consulting styles. We are planning a prospective study

**Table 4.** Stepwise forward multiple logistic regression model (final step): frequent attender status as the dependent variable (n = 302).

| Variables | b-coefficient | OR | 95% CI | Wald test | P-value |
|---|---|---|---|---|---|
| Depression : | | | | | |
| BDI ≥13[a] | | | | | |
| BDI <13 | 2.84 | 17.18 | 7.54–39.01 | 45.88 | <0.0001 |
| Self-reported health: | | | | | |
| Poor, 'so-so' or neither good nor bad[a] | | | | | |
| Good or excellent | 0.98 | 2.67 | 1.4 0–5.10 | 8.90 | 0.0029 |
| Respiratory problems: | | | | | |
| Neither[a] | | | | | |
| One or more | 0.79 | 2.20 | 1.11–4.37 | 5.14 | 0.0234 |
| Number of health problems | 0.46 | 1.58 | 0.89–2.84 | 2.41 | 0.1208 |
| Sex | | | | | |
| Male[a] | | | | | |
| Female | -0.47 | 0.62 | 0.33–1.18 | 2.08 | 0.1475 |

[a]Reference group in all calculations. The exit P-value was 0.20 and the entrance P-value was 0.15. On the Hosmer–Lemeshow goodness of fit test: $c^2 = 3.4852$; d.f. = 8; P = 0.9003.

in which depressive status is used to predict patterns of health care utilisation,[17] and in which we will investigate a wider set of explanatory variables.

The authors consider that the results from this study are sufficient to make three recommendations:

1. General practitioners should consider depression to be a likely diagnosis for frequent attendance patients.
2. Frequent attendance is a clinical phenomenon, like raised blood pressure, which should be routinely recorded in patients' notes.
3. Primary care interventions aiming to reduce the extent and burden of frequent attendance should now focus on the effective management of depression and related disorders.

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## Acknowledgements

Thanks are due to the partners and patients of Aintree Park Group Practice and Zaidín-Sur Health Centre.



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