

# Understanding patient-initiated frequent attendance in primary care: a case-control study

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## SUMMARY

**Background.** Frequent attendance, which accounts for a high proportion of the general practitioner's (GP's) workload, is still poorly understood.

**Aim.** To assess the association and impact of exposure to chronic physical illness, mental disorders, life stress, and sociodemographic factors on the frequent attendance of primary health care medical services.

**Method.** Nine general practices in Bizkaia, Spain, participated in a case-control study. Cases were patients who exceeded the 90th percentile in the distribution of the number of visits that they made on their own initiative from January 1993 to March 1994. Controls were those for whom a single, patient-initiated consultation was registered. A total of 102 cases and 100 controls were selected by stratified sampling proportional to the size of each practice. We estimated odds ratios and population attributable fractions for frequent attendance in relation to being exposed to the study variables, adjusted by demographic characteristics by means of logistic regression analysis.

**Results.** Medium-high life stress (adjusted odds ratio (AOR) = 4.5, 95% confidence interval (CI) = 1.7–12.8), chronic physical illness (AOR = 3.1; 95% CI = 1.4–6.9), mental disorder (AOR = 2.5; 95% CI = 1.3–5.1), and age were associated with patient-initiated frequent attendance. The adjusted population attributable fraction for chronic physical illness was 41%, 30.9% for mental disorder, and 15.2% for life stress.

**Conclusion.** There is evidence that patient-initiated frequent attendance is related to genuine physical and psychosocial needs; therefore, recognition requires a bio-psychosocial approach on the part of GP.

**Keywords:** primary health care; frequent attenders, biological models, psychological models, social problems.

## Introduction

MANY doctors do not understand why some patients decide to use primary health care services very frequently. Although the problem of frequent attenders has been studied for

more than 25 years, the question of whether individuals are behaving in a deviant fashion or appropriately in response to genuine unmet needs is still unresolved.<sup>1</sup> Frequent attenders seek medical care with somatic complaints that are difficult to diagnose, as biological problems are often combined with psychological, psychiatric, life stressful events, and marital or social factors.<sup>2–8</sup>

Frequent attendance behaviour not only accounts for a high proportion of the GP's workload,<sup>9</sup> but also causes frustrations, annoyance, and a dysfunctional doctor–patient relationship. Moreover, patient-initiated frequent attendance seems to be problematical for the doctor because, on many occasions, the patient's demands cannot be justified by the doctor's findings.

Results of different studies<sup>2,4,9</sup> are influenced by the effect exerted by providers on the use of services, since the demand for consultation generated on the patient's own initiative is not specifically addressed. Other reasons for controversial results include the method used to select frequent attenders, as well as differing health care systems and sociocultural contexts.

In this study, in order to understand frequent attendance behaviour, a group of bio-psychosocial factors was analysed to test the association and quantify the impact of chronic physical illnesses, mental disorders, life stress, and different sociodemographic factors on patient-initiated frequent attendance in the primary care setting.

## Method

Nine general practices (serving a population of approximately 18 000) from public primary health care centres in Bizkaia, Basque Country (Spain), participated in a case-control study. The Basque Health System is a public organization in which universal free health care services are provided to every citizen. Subjects are individually included in the list of a physician who acts as gatekeeper to other health care levels. A total of 12 911 patients who made at least one appointment with a GP on their own initiative from January 1993 to March 1994 were eligible.

All visits performed during the study period were prospectively registered. At the end of each visit, the physician recorded whether the visit had been carried out on the patient's own initiative. It was considered that patients consulted a doctor on their own initiative when at least one of the reasons for encounter was not generated by the physician. At the end of the 15-month study period, only the visits initiated by the patient, according to this definition, were considered in order to determine whether or not a patient was frequent attender. We excluded 1397 of these patients who were aged under 18 or over 80, or were bedridden, or had disabilities preventing cooperation.

Cases comprised 1089 patients who exceeded the 90th percentile in the distribution of the number of visits for each physician, and controls comprised 3333 patients for whom a single patient-initiated consultation was registered. Finally, 110 cases and 123 controls were selected by stratified sampling based on allocation proportional to the size of each practice, but only 102 (93%) cases and 100 (81%) controls completed the study. There were no statistically significant differences between responders and non-responders with regard to age ( $P>0.5$ ), sex ( $P>0.25$ ), and mean number of visits ( $P>0.22$ ).

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Exposure to stressful life events in the year preceding the interview was measured using the Social Readjustment Rating Scale.<sup>10</sup> A subject was considered to have been exposed to a medium–high stress level when a score greater than or equal to 200 was recorded.

The Schedules for Clinical Assessment in Neuropsychiatry (SCAN),<sup>11</sup> a semistructured psychiatric interview recommended by the World Health Organization, was also used. Using the algorithms of the computer programme CATEGO-5, it was considered that a patient had been exposed to a mental disorder when — independently of the index of definition — an International Classification of Diseases, 10<sup>th</sup> edition (ICD-10), diagnosis was obtained, and the symptomatic episode had been present for the period 1 January 1993 to 31 December 1993. Seven psychiatrists trained in administering the SCAN carried out interviews.

Participants' medical records were examined to identify chronic physical illnesses.<sup>12</sup> Patients were then interviewed by the GP in respect to chronic illnesses in a complementary visit. Age, gender, education, marital and occupational status, family vital cycle stage and number of persons living together were also recorded. Family dysfunction and social support were measured by validated Spanish versions of the family APGAR (Smilkstein),<sup>13,14</sup> and the Duke-UNC (Broadhead) functional social support<sup>15,16</sup> questionnaires.

### Statistical analysis

Cases and controls were compared using the chi-squared ( $\chi^2$ ) test. We estimated the prevalence of cases and controls exposed to the study variables, as well as the 95% confidence intervals, by the exact binomial method. Crude odds ratios (ORs) and 95% confidence intervals (CI) were calculated using the Cornfield method. The Epi Info statistical programme was used for these analyses.<sup>17</sup> Adjusted odds ratios (AORs) and 95% CIs were calculated to assess the association between the study variables and frequent attendance using unconditional multiple logistic regression analysis. Starting with all variables in the model and following a backward strategy, the variable with the highest *P* value ( $P > 0.05$ ), using the likelihood ratio test and the Wald's test,<sup>18</sup> was excluded at each step. The GLIM statistical package was used for calculations.<sup>19</sup> Prior to the removal of each variable, the absence of significant first-order interactions and confounding effects with the remaining variables was assessed. After the final model was fitted, a residual analysis was performed with the SAS statistical package.<sup>20</sup>

The population attributable risk for the study variables, simultaneously adjusted for the other factors included in the model,<sup>21</sup> was estimated to determine the fraction of frequent attendance that hypothetically could be avoided if factors associated with this behaviour (either individually or all together) could be perfectly controlled. In contrast to the odds ratio, this measure (also named attributable fraction) takes into account the prevalence of the study factors. It estimates the proportion of frequent attendance that is explained by the study variables. Overall, it evaluates the extent of our knowledge on frequent attendance.

### Results

The group of 1089 frequent attenders made a total of 17 212 visits, 10 563 of which were generated by the patient, with a median of nine patient-initiated visits (range 6–14). This accounted for 27.5% of all patient-initiated visits made during the study period (Table 1). Differences in sociodemographic characteristics between cases and controls are shown in Table 2. Frequent attenders were significantly older, less educated, and were more often

widowed or divorced. There were more housewives, pensioners, and disabled people in the case group than in the controls; as well as family units, with fewer than three persons, or more, often in the situation of break-up or contraction. Cases and controls did not differ significantly in family dysfunction or social support.

Frequent attenders showed significantly higher prevalence rates of chronic physical illness, mental disorder, and exposure to medium–high life stress than controls (60.8% versus 18%, 51% versus 28%, and 19.6% versus 8%, respectively) (Table 3). Osteoarthritis and arthritis (22%) and hypertension (21%) were the commonest categories of chronic physical illnesses found in frequent attenders. The most common mental disorders among them were stress-related disorders, neurotic disorders, and somatoform disorders (F-4 group, ICD-10: 33%), mood disorders (F-3 group, ICD-10: 29%), and behavioural disorders associated with physiological dysfunctions and somatic complaints (F-5 group, ICD-10: 27%). Stressful life events, more frequently found among cases than controls, included death of spouse, divorce, death of a close family member, and self-perception of lesion or disease.

After multivariate analysis, exposure to medium–high life stress, chronic physical illness, mental disorder, and age appeared to be independently associated with frequent attendance, but the adjustment changed the crude odds ratios for the first two factors substantially (Table 4). According to the effects estimated by this model, the fraction of frequent attendance that may be attributed to the study factors can be calculated using the prevalence of these variables among cases. The adjusted population attributable fraction was 41% for the presence of chronic physical illness, 30.9% for the presence of mental disorder, and 15.2% for life stress. The summary attributable fraction was 66.2% for any of these three factors and 82.3% when age was added. The association of frequent attendance with the remaining sociodemographic and family variables in the univariate analysis disappeared when its effect was adjusted by the other co-variables in the model.

### Discussion

Frequent attenders — less than 10% of patients — accounted for 27.5% of all patient-initiated visits made to GPs in primary care centres. These patients may be viewed either as individuals behaving appropriately in response to genuine needs or as deviant individuals who create an unjustified workload to their GPs.<sup>1</sup> Our study shows that frequent attendance is not an inappropriate behaviour but develops to a large extent in response to health care needs. Overall, a high proportion of patient-initiated frequent attendance (82%) is attributable to the patient's age, together with chronic physical illnesses, mental disorders, and life stress.

However, many GPs do not share a justifying opinion for frequent attendance and argue that, to a great extent, the reasons for this phenomenon remain undetermined. In previous studies, in up

**Table 1.** Study population: number (percentage) of patients and patient-initiated visits by different percentile of use of general practices.

Use of general practices	Patients (n = 11 514) No (%)	Visits (n = 38 425) No (%)
>90 <sup>th</sup> percentile	1089 (9.5)	10 563 (27.5)
30–90 <sup>th</sup> percentile	7092 (61.6)	24 529 (63.8)
<30 <sup>th</sup> percentile	3333 (28.9)	3333 (8.70)

**Table 2.** Sociodemographic characteristics of 102 frequent attenders (cases) and 100 controls.

Variable	Cases No (%)	Controls No (%)	P-value
Sex: females	66 (64.7)	52	0.07
Age (years)			
18-44	30 (29.4)	70	<0.001
45-64	38 (37.3)	24	
65-80	34 (33.3)	6	
Marital status			
Unmarried	14 (13.7)	37	<0.001
Married	72 (70.6)	60	
Divorced	4 (3.9)	2	
Widowed	12 (11.8)	1	
Unfinished basic education	60 (58.8)	20	<0.001
Occupational status			
Student	4 (3.9)	15	<0.001
Unemployed	8 (7.8)	15	
Working	22 (21.6)	42	
Housewife	26 (25.5)	18	
Disabled	11 (10.8)	3	
Pensioner	31 (30.4)	7	
High social support <sup>a</sup>	91 (89.2)	90	
Family dysfunction <sup>b</sup>	19 (18.6)	19	0.95
Family vital cycle			
Formation	6 (5.9)	5	0.01
Extension	36 (35.3)	56	
Contraction	38 (37.3)	29	
Breaking	11 (10.8)	2	
Other	11 (10.8)	8	
Fewer than three persons living together	34 (33.3)	16	

<sup>a</sup>A score >32 in the Duke-UNC functional social support questionnaire; <sup>b</sup>a score <7 in the family APGAR.

**Table 3.** Exposure to chronic physical illness, mental disorder and life stress among frequent attenders (cases) and controls.

	Cases (n = 102) prevalence % (95% CI)	Controls (n = 100) prevalence % (95% CI)	Crude odds ratio (95% CI)
Chronic physical illness	60.8 (50.6 to 70.3)	18.0 (11.0 to 26.9)	7.1 (3.5 to 14.3)
Mental disorder	51.0 (40.9 to 61.0)	28.0 (19.5 to 37.9)	2.7 (1.4 to 5.0)
Life stress	19.6 (12.4 to 28.6)	8.0 (3.5 to 15.2)	2.8 (1.1 to 7.4)

CI: confidence interval.

**Table 4.** Association between frequent attendance and different bio-psychosocial factors, final model estimated by multiple logistic regression analysis.

Variable	Adjusted odds ratio (95% confidence interval)	Likelihood ratio test		
		c <sup>2</sup>	d.f.	P-value
Life stress	4.5 (1.7 to 12.8)	9.18	1	0.0024
Chronic physical illness	3.1 (1.4 to 6.9)	7.60	1	0.0058
Mental disorder	2.5 (1.3 to 5.1)	7.27	1	0.0070
Age (years)		15.09	2	0.0005
18-44	1.0			
45-64	2.8 (1.3 to 6.2)			
65-80	8.2 (2.7 to 28.0)			

Lack of fit of the model: scaled deviance 13.32, residual d.f. 16, P = 0.65.

to 50% of all primary care visits, no serious medical cause or demonstrable organ pathology was found to explain the patients' complaints.<sup>6</sup> If practitioners focus exclusively on physical illness, underlying psychosocial factors associated with frequent attendance, which appear to play a major role in prompting the visit and perpetuating the vicious circle of using medical services in maladaptive and inefficient ways,<sup>22</sup> will not be detected.

In this study, 41% of all cases of patient-initiated frequent attendance can be attributed to exposure to chronic physical ill-

ness, 31% to mental disorders, and 15% to life stress. The summary fraction attributable to any of these factors is 66%. This indicates that an effective bio-psychosocial approach would enable the detection, understanding, and effective management of most cases of patient-initiated frequent attendance. To this effect, first, the patient's consultation frequency must be checked as part of the routine clinical assessment. On the other hand, it is particularly useful for the doctor to develop strategies for clinical interview and effective communication in order to explore emo-

tional clues and social and family factors associated with high use of primary care services.<sup>23,24</sup>

Consultation rates are higher, and high demand of medical care more likely, with increasing age.<sup>2-4</sup> In our study, age was an important confounding factor in regard to chronic illness and life stress. In agreement with Karlsson *et al*,<sup>2</sup> a significant association between frequent attendance and sex was not found. The apparent significant effect of other sociodemographic variables, also found by others,<sup>2-4</sup> disappeared after adjusting in the multivariate analysis.

Although the Social Readjustment Rating Scale has been criticized for the weight assigned to each life event,<sup>25</sup> it is easy to use in clinical practice and has gained wide acceptance when estimating the contribution of stressful events when there appears to be some type of mental disturbance.

The strength of the associations with frequent attendance was estimated using both extremes of attendance. Since controls were selected from patients in whom a single consultation was registered rather than from the whole primary care population, as long as the study factors showed a linear association with the use of services, it is possible that our controls would have been less exposed to these factors than the study base population. Results may then be interpreted as the maximum effect exerted by the study variables on frequent attendance. It is unclear which individuals should be used as controls in frequent attendance studies: modal users, infrequent users, or others.<sup>26</sup> Our design is justified for the sake of statistical and economic efficiency. The exploratory capacity to detect, as statistically significant, some of the effects encountered, would have been limited by the selection of a control sample of similar size from the whole primary care population.

The validity of the results obtained is not substantially affected by the lack of consideration of other factors (influence of providers, organizational aspects of primary care services), because visits generated by the practitioner's initiative were excluded and sampling was performed by stratifying cases and controls for each physician.

## Conclusion

Our findings indicate that working to a bio-psychosocial model of health care<sup>23</sup> is essential for understanding and managing most cases of patient-initiated frequent attendance. Although this approach is the desirable basis for any consultation with any patient in primary care, it would be incorrect to assume that it corresponds to the reality of a GP's everyday work.<sup>27</sup> More qualitative research on this area, and cohort studies on frequent attendance with a long-term follow-up, are warranted to confirm the present results and to identify those factors determining why some people with the same physical and psychosocial characteristics are frequent attenders and others are not.

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