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Epidemiology

Clinical characteristics of persistent frequent attenders in primary care: case–control study

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Abstract

Background. Most frequent attendance in primary care is temporary, but persistent frequent attendance is expensive and may be suitable for psychological intervention. To plan appropriate intervention and service delivery, there is a need for research involving standardized psychiatric interviews with assessment of physical health and health status.

Objective. To compare the mental and physical health characteristics and health status of persistent frequent attenders (FAs) in primary care, currently and over the preceding 2 years, with normal attenders (NAs) matched by age, gender and general practice.

Methods. Case–control study of 71 FAs (30 or more GP or practice nurse consultations in 2 years) and 71 NAs, drawn from five primary care practices, employing standardized psychiatric interview, quality of life, health anxiety and primary care electronic record review over the preceding 2 years.

Results. Compared to NAs, FAs were more likely to report a lower quality of life ($P < 0.001$), be unmarried ($P = 0.03$) and have no educational qualifications ($P = 0.009$) but did not differ in employment status. FAs experienced greater health anxiety ($P < 0.001$), morbid obesity ($P = 0.02$), pain ($P < 0.001$) and long-term pathological and ill-defined physical conditions ($P < 0.001$). FAs had more depression including dysthymia, anxiety and somatoform disorders (all $P < 0.001$).

Conclusions. Persistent frequent attendance in primary care was associated with poor quality of life and high clinical complexity characterized by diverse and often persistent physical and mental multimorbidity. A brokerage model with GPs working in close liaison with skilled psychological therapists is required to manage such persistent complexity.

Key words: Frequent attendance, health anxiety, medically unexplained symptoms, primary care, quality of life.

Introduction

Frequent attenders (FAs; top decile of face-to-face attendance) account for 38% of all primary care attendance, generating a high proportion of total cost and workload, and increased prescriptions and secondary care attendance compared to other attenders in primary care (1–3). Recent prospective research in Europe shows that only one in seven frequently attending patients continue to attend primary care so frequently over the next 2 years (4,5). Therefore, psychological interventions might be best focussed on *persistent* FAs in primary care. In the UK, unlike long-term conditions that are typically managed by a multi-disciplinary team of GPs, nurses and other professionals, the management of persistent FAs in primary care has largely been the responsibility of GPs with little assistance from others, in particular, mental health professionals (6).

Initiatives such as Improving Access to Psychological Therapies (IAPT) in England are being extended to offer psychological

treatment to manage patients with both long-term physical and mental health problems to address these issues in primary care (5). Although there are a number of record-based and questionnaire studies on FAs in primary care (4,5,7–9), there are no case–control studies employing a full standardized psychiatric interview with a standardized assessment of long-term conditions and health status. Such data might guide service planning, for example, of relevant therapist expertise or commissioning of care more tailored to patient need. In this regard, identification of FAs in ways that can be realistically achieved in routine primary care without being burdensome for practices may also be helpful. Using a method of case identification that could be easily replicated in routine practice, this study aimed to compare the psychiatric, physical health and health status characteristics of FAs and normal attenders (NAs) in primary care.

Methods

Design

This matched case–control study compared the clinical and sociodemographic characteristics of FAs with NA controls (10). We piloted an approach in one practice (practice A) before extending the approach to four other practices.

Practice selection

Five practices across Nottinghamshire were purposively selected to obtain a wide variation in existing organization of care and sociodemographic contexts (Table 1).

Practice A was selected because it prioritized access to care over continuity of GP care. It covered four sites in close proximity to a general hospital and served a deprived population.

Practice B was selected because it emphasized continuity of GP care, seeking to ensure patients saw the same GP on each occasion. It served a more affluent population and was purpose built on the site of a hospital.

Practice C had some university links, served an affluent population on two sites but was not close to a general hospital. It followed a policy of trying to meet patient preferences to see the GP of the patient's choice but suggested alternatives if appointments would be delayed.

Practice D prioritized same-day access to a GP rather than continuity of care with the same doctor if that meant waiting longer. Direct access to mental health professionals and welfare advice with financial problems was available at the practice. It served a deprived population and was not close to a general hospital.

Practice E was similar to practice C organizationally but served an inner city ethnically diverse population in an area of high social deprivation.

Table 1. Practice profiles recruiting matched cases of persistent FAs and NAs

	Practice A	Practice B	Practice C	Practice D	Practice E
Registered patients	26 977	11 552	12 915	14 067	15 325
No. of sites	4	1	2	1	1
GPs	14	7	14	8	6
Deprivation decile[a]	4	6	9	5	2

[a]Based on Index of Multiple Deprivation (11): 10 represents least deprived.

Inclusion criteria

Regular attenders

For data protection reasons, practice staff, rather than the research team, selected FAs from their practice lists. Initially, we tried to recruit the top 10% of FAs by age and gender as previously suggested (12) but the pilot practice found this too burdensome to operate. Therefore, we established the consultation rate that was within the top 10% of all face-to-face contacts with GPs in a pilot phase in practice A and then applied that rate in all five practices in the study (10). That rate was 15 face-to-face contacts with GPs per year so we set a cut-off of 30 or more face-to-face contacts with GP or practice nurse within the last 2 years.

Normal attenders

Up to 22 face-to-face contacts with GP or practice nurse over 2 years. This upper limit was based on a previous study of eight Nottinghamshire practices showing a median annual attendance of eight, interquartile range (IQR) (3–11) face-to-face consultations with GPs (13).

Both groups

Aged 18 years old or over; written informed consent to the study.

Exclusion criteria

Participants were excluded by GPs in the practice if they had a diagnosis of an acute life-threatening or catastrophically disabling physical illness, e.g. cancer, stroke or an acute serious mental illness such as schizophrenia, bipolar disorder, anorexia nervosa or dementia because these patients would not be referred for psychological treatment for FA in routine clinical practice. However, participants who had any of these conditions for longer than 2 years and were in remission or stable were included. Contacts for routine health care checks with nursing staff such as blood sugar or blood pressure monitoring, urine checks for drug misuse, routine blood tests, dressing changes or health promotion, e.g. smoking cessation, weight control, vaccination, were not included in the count of consultations nor were telephone contacts or contacts with staff other than GPs or practice nurses.

Recruitment of participants

Practices identified FA and NA patient groups from their practice lists by an electronic search using study inclusion and exclusion criteria. All potential FAs and NAs meeting the criteria were sent a letter from the practice that included a study invite letter addressed from the GP practice, a participant information sheet and consent to contact form. Written and oral informed consent was obtained at interview from both FAs and NAs. Case comparisons were made with NAs matched by practice, gender and age (within 5 years) from batches of NAs selected at random by the practices themselves until the required numbers of NAs from each practice were recruited.

Clinical characteristics

Baseline assessments consisted of four measures.

Structured Clinical Interview for DSM-IV

The research version of a standardized psychiatric interview was used to determine whether participants met axis 1 DSM-IV psychiatric disorder (14,15) in the preceding 2 years. All interviews were conducted by the research team who were trained and supervised on administering the Structured Clinical Interview for DSM-IV (SCID) by

a psychiatrist. In addition to DSM-IV criteria, the abridged criteria for somatization disorder were applied (16) and an additional diagnosis of health anxiety disorder was created by replacing the criterion for specific disease conviction in the DSM-IV diagnosis of hypochondriasis with persistent worrying about acquiring a serious physical illness. Thus, the criteria for health anxiety disorder together with hypochondriasis are broadly in line with DSM-V illness anxiety disorder (17).

Health Anxiety Inventory

Health Anxiety Inventory Short Week Adapted (18) is a 14-item self-rated tool to measure health anxiety over the preceding week. A cut-off score of 15 indicates people who would be accepted by IAPT in England for psychological treatment of health anxiety (18 indicates severe health anxiety). Avoidance scores are calculated by asking respondents to rate their likelihood of avoiding 10 health situations, scores ranging from 0 (would not avoid it) to 8 (always avoid it). Reassurance seeking scores are calculated based on how often the individual seeks reassurances from a range of nine sources, scores ranging from never (0) to daily (8).

EQ-5D-3L

EuroQoL (19) is a descriptive system for health-related quality of life. The measure is self-completed and defines health states using five dimensions (mobility, self-care, usual activities, pain/discomfort, anxiety/depression), each with three levels of severity (no problems, some or moderate problems, extreme problems). In addition, respondents are asked to rate their health on a visual analogue scale (VAS) ranging from 0 to 100, where a score of 0 indicates their worst and a score of 100 indicates their best imaginable health state. Using a valuation from a nationally representative sample, it is possible to attach preference weights to individuals' responses (20). This enables the elicitation of a single index value on a scale anchored at 0 and 1, where 1 is 'full health' and 0 is a health state of equivalent value to being dead.

Client Service Receipt Inventory

Client Service Receipt Inventory (21) involves an interview with the participant to collect data on health service use in the preceding 3 months. Information is collated for primary and secondary care use and prescribed medication.

Physical health

Details of long-term conditions of all participants were obtained from electronic primary health care records using a published classification (22). In addition, body mass index (BMI) scores were extracted from medical records.

Statistical analysis

Case and controls were compared using univariate analyses on Stata version 13 with statistical significance level set at $P < 0.05$. Paired *t*-tests were carried out to compare normally distributed data and Wilcoxon signed-rank tests were conducted for skewed variables. McNemar's test was used to test for group differences in binary variables and symmetry tests were used to test for group differences in categorical variables. We adopted a descriptive approach using univariate statistics to describe the nature of the clinical characteristics of FAs, their health profile and quality of life in order to inform the planning of interventions.

Results

Figure 1 shows the flow of patients through the study. Recruitment became more efficient in the remaining practices after the pilot was

conducted. The research team checked all data provided by practices and excluded 16 pairs of cases who had too few contacts to be FAs and too many to be NAs. Of the 472 FAs who were approached to take part in the study, 71 were recruited with a median of 37 (IQR 32–45, range 30–90) face-to-face contacts with GP or nurse. GP practices approached 422 NA patients (four practices sent three invite letters for every FA recruited and the pilot practice sent out 10 invite letters for every FA recruited) to recruit 71 controls. The median number of face-to-face GP or nurse consultations for NAs was 7 (IQR 5–12, range 0–21). In each group, there were 55 (77%) women. The mean ages for FAs and NAs, respectively, were 57 years (SD 19) (range 20–89) and 56 years (SD 18) (range 20–86).

Table 2 shows self-reported service use in the 3 months preceding the baseline interview and socio-demographic factors for FAs and NAs. FAs reported significantly higher rates of face-to-face consultations with the GP and more prescribed medication, particularly central nervous (59%), cardiovascular (41%) and gastrointestinal systems (37%) drugs according to British National Formulary categories. Thirty-five (49%) FAs had visited the hospital at least once in the preceding 3 months compared to 27 (38%) NAs; these differences were not statistically significant. FAs were significantly less likely than NAs to be married and more likely to be without an educational qualification but slightly higher rates of unemployment and lower income were not statistically significant.
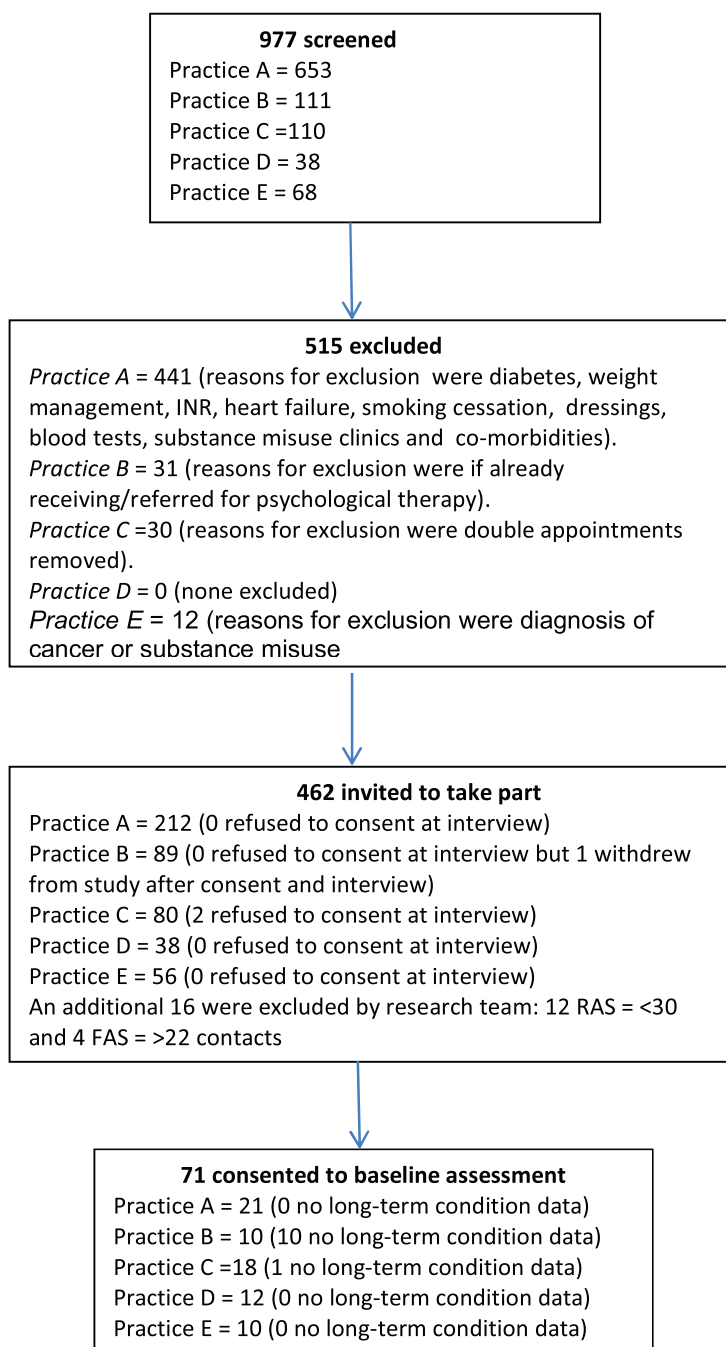
The median (range) of SCID_DSM-IV disorder was 2 (0–11) for FAs and 0 (0–4) ($P < 0.001$) for NAs in the preceding 2 years. The number (percentage) of FAs with zero, one, two or three or more mental disorders were 17 (25), 8 (12), 10 (15) and 33 (49); the respective figures for NAs were 50 (74), 10 (15), 6 (9) and 2 (3). Although there were wide confidence intervals, FAs were 5 times more likely than NAs to have major depression, 24 times more dysthymia, 22 times more any anxiety disorder and 17 times more somatoform disorder (Table 3).

In addition, Table 4 shows that FAs had significantly more health anxiety (including both reassurance seeking and avoidance) than NAs with a mean above the threshold for severe health anxiety, a higher BMI with a mean at the obese level for adults (30) and more long-term conditions with a median of 3 for FAs and 1 for NAs. Table 4 lists the most frequent long-term physical conditions all of which were significantly more common in FAs than NAs, including physical health conditions with a well-defined pathophysiology, e.g. hypertension, asthma and diabetes and ill-defined conditions, e.g. such chronic pain requiring the prescription of four or more different analgesics and irritable bowel syndrome. Table 4 shows that FAs rated their health status substantially worse than NAs on the EQ-5D VAS, tended to report more problems in all dimensions of the EQ-5D and had a lower index score. For all dimensions except self-care, FAs were most likely to report having moderate problems, while NAs were most likely to report having no problems.

Discussion

Summary of main findings

Persistent FAs, compared to age-, gender- and practice-matched NAs, had a complex range of clinical problems, with more mental disorders, particularly persistent mental disorder such as dysthymia, anxiety disorder and somatoform disorder, more long-term pathological (hypertension, asthma, diabetes) and more ill-defined long-term physical conditions (painful conditions associated with the use of four or more analgesics, irritable bowel syndrome) in the last 2 years, with greater health anxiety, a higher BMI and lower quality of life. On average, FAs had three mental health conditions each and

> **977 screened**
> Practice A = 653
> Practice B = 111
> Practice C =110
> Practice D = 38
> Practice E = 68

> **515 excluded**
> *Practice A* = 441 (reasons for exclusion were diabetes, weight management, INR, heart failure, smoking cessation, dressings, blood tests, substance misuse clinics and co-morbidities).
> *Practice B* = 31 (reasons for exclusion were if already receiving/referred for psychological therapy).
> *Practice C* =30 (reasons for exclusion were double appointments removed).
> *Practice D* = 0 (none excluded)
> *Practice E* = 12 (reasons for exclusion were diagnosis of cancer or substance misuse

> **462 invited to take part**
> Practice A = 212 (0 refused to consent at interview)
> Practice B = 89 (0 refused to consent at interview but 1 withdrew from study after consent and interview)
> Practice C = 80 (2 refused to consent at interview)
> Practice D = 38 (0 refused to consent at interview)
> Practice E = 56 (0 refused to consent at interview)
> An additional 16 were excluded by research team: 12 RAS = <30 and 4 FAS = >22 contacts

> **71 consented to baseline assessment**
> Practice A = 21 (0 no long-term condition data)
> Practice B = 10 (10 no long-term condition data)
> Practice C =18 (1 no long-term condition data)
> Practice D = 12 (0 no long-term condition data)
> Practice E = 10 (0 no long-term condition data)

Figure 1. Flow of participants recruiting persistent FAs into study by practice

three long-term physical or ill-defined conditions in the last 2 years in contrast to NAs who had one long-term physical, mental or ill-defined condition.

Comparison with previous literature

The results confirm and extend previous medical record-based studies indicating that FAs are more likely to have problems with anxiety, health anxiety, long-term and ill-defined physical conditions and BMI above 30 than NAs; the previous literature indicates that FAs may also have more traumatic life events in the preceding 3 years and a history of physical abuse in women (6,8,9,23,24). This study also shows that FAs experience high rates of persistent mental

disorder such as dysthymia. FAs' EQ-5D index values were considerably lower than population norms (25) but similar to other samples with long-term physical and ill-defined conditions such as chronic obstructive airways disease and irritable bowel syndrome (26).

Study strengths and limitations

This study has provided additional, in-depth data on the clinical characteristics of FAs compared to age- and gender-matched NAs from the same practice. The recruitment of 15% FA cases underlines the challenges of engaging this complex group of patients in research. The case–control design allowed an unbiased comparison between FAs and NAs across practices with different approaches

Table 2. Socio-demographic characteristics of 71 persistent FAs and 71 NAs in the preceding 3 months

Variable	FA median (range) or *n* (%)	NA median (range) or *n* (%)	*P* value
Service use			
No. of GP appointments	4 (0–30)	1 (0–6)	<0.001[a]
No. of medications	5 (0–18)	1 (0–14)	<0.001[a]
No. of secondary care contacts	0 (0–10)	0 (0–6)	0.15[a]
No. of emergency care contacts	0 (0–3)	0 (0–2)	0.17[a]
Marital status			
Married/partner	37 (52)	48 (68)	0.03[b]
Single/divorced/widow	34 (48)	23 (32)	
Highest educational qualifications			
None	28 (39)	14 (20)	0.009[c]
Degree	7 (10)	16 (22)	
Other	36 (51)	41 (58)	
Occupational status			
Unemployed	11 (15)	7 (10)	0.36[c]
Employed	24 (34)	30 (42)	
Retired	29 (41)	33 (46)	
Carer	6 (8)	1 (1)	
Missing	1 (1)	0 (0)	
Monthly net income			
£0–£500	15 (21)	9 (13)	0.10[c]
£500–£1000	14 (20)	25 (35)	
£1000+	23 (32)	28 (39)	
Missing	19 (27)	9 (13)	

[a]Wilcoxon signed-rank tests for service use.
[b]McNemar's test for marital status.
[c]Symmetry tests for highest educational qualifications, occupational status and monthly net income.

Table 3. Two-year prevalence of mental disorder in 71 persistent FAs and 71 NAs

SCID criteria	FA, *n* (%)	NA, *n* (%)	Odds ratio (95% CI)	*P* value[a]
Major depressive episode	31 (46)	14 (21)	5.3 (1.8–21.0)	<0.001
Dysthymia	25 (37)	2 (3)	24.0 (3.9–987.0)	<0.001
Any depression diagnosis	34 (50)	14 (21)	6.0 (2.1–23.8)	<0.001
Panic disorder	14 (21)	1 (2)	0.19 (0.08–0.30)[b]	<0.001
Social phobia	8 (12)	0	0.12 (0.03–0.21)[b]	0.003
Specific phobia	9 (13)	1 (2)	8.0 (1.1–355.0)	0.02
Post-traumatic stress disorder	8 (12)	0	0.12 (0.03–0.21)[b]	0.002
Generalized anxiety disorder	22 (32)	3 (4)	20.0 (3.2–829.0)	<0.001
Any anxiety diagnosis	28 (41)	7 (10)	22.0 (3.6– 908.0)	<0.001
Somatization disorder	10 (15)	2 (3)	9 (1.3–394.5)	0.011
Abridged somatization disorder	27 (40)	2 (3)	13.5 (3.4–117.2)	<0.001
Hypochondriasis	10 (15)	0	0.12 (0.05–0.25)[b]	0.002
Health anxiety disorder	10 (15)	0	0.12 (0.05–0.25)[b]	0.002
Any somatoform disorder	36 (53)	4 (6)	17.0 (4.4–146.1)	<0.001

CI, confidence interval. Note diagnoses are not mutually exclusive, *n* = 68 in both FAs and NAs.
[a]McNemar's test for all binary SCID criteria variables.
[b]Risk difference (95% CIs).

to the organization of care and serving different populations. A strength of the design is that we recruited a sample of NAs within a broad range of normal attendance so that we did not recruit a sample of exceptionally healthy controls. The upper limit of attendance in the NA group was three quarters of the minimum attendance in the FA group so the NA group also has some persistent mental and physical disorders over 2 years. A limitation of our study is that there are no data available to compare responders to non-responders to take part in the study because the research team had no access to non-responder data.

Previous research studies, with additional research infrastructure support, have used the proportionate method for defining the top

decile of attenders at each practice with different cut-offs for male and female in young adulthood, middle and old age ([12]). By not setting age and gender cut-offs, our sample might be biased to an older and more female sample, potentially increasing the prevalence of long-term physical conditions that become more common with age and the prevalence of some mental disorders more common in women, such as depression. However, the proportionate method may similarly increase the prevalence of other common problems seen in younger people such as substance misuse, possibly further increasing the diversity of health presentations among FAs. A limitation of the study was the exclusion of telephone contacts, which is now an important method of primary care intervention with all

Table 4. Health status, BMI, long-term conditions and health anxiety in 71 persistent FAs and 71 NAs

Variable	FA	NA	P value	Odds ratio (95% CI)
EQ-5D-3L				
Index value: median (IQR)	0.66 (0.19–0.80)	1.00 (0.80–1.00)	<0.001[a]	N/A
VAS score: median (IQR)	50 (40–65)	85 (70–95)	<0.001[a]	N/A
Dimensions[b]	L1 | L2 | L3	L1 | L2 | L3		
Mobility	30 | 41 | 0	56 | 15 | 0	<0.001[a]	N/A
Self-care	51 | 20 | 0	69 | 1 | 1	<0.001[a]	N/A
Usual activities	29 | 34 | 8	62 | 7 | 2	<0.001[a]	N/A
Pain/discomfort	11 | 41 | 19	48 | 20 | 3	<0.001[a]	N/A
Anxiety/depression	31 | 34 | 6	61 | 8 | 2	<0.001[a]	N/A
HAI				
Score of items 1–14: mean (95% CI)	18.5 (15.9–21.2)	6.6 (5.3–7.8)	<0.001[c]	N/A
Reassurance seeking: mean (95% CI)	25.0 (20.9–29.1)	14.0 (10.5–1765)	<0.001[c]	N/A
Avoidance: median (IQR)	6.0 (0–17)	0 (0–4)	0.0024[a]	N/A
BMI: median (IQR)	30.1 (25.7–31.6)	26.2 (24.6–28.8)	0.020[a]	N/A
Long-term conditions[d]: median (range)	3 (0–8)	1 (0–5)	<0.001[a]	N/A
Hypertension[e], *n* (%)	29 (48)	14 (23)	0.002	4.8 (1.6–19.2)
Painful condition[e], *n* (%)	22 (37)	7 (12)	0.004	3.5 (1.4–10.6)
Asthma (currently treated)[e], *n* (%)	17 (28)	7 (12)	0.033	2.7 (1.0–8.3)
Irritable bowel syndrome[e], *n* (%)	16 (27)	7 (12)	0.020	4.0 (1.1–22.1)
Diabetes[e], *n* (%)	9 (15)	2 (3)	0.012	8.0 (1.1–355.0)

CI, confidence interval.

[a]Wilcoxon signed-rank tests for EQ-5D dimensions, index value and VAS, Health Anxiety Inventory (HAI) avoidance scores, BMI and long-term conditions.

[b]Number of participants reporting level 1 (L1; no problems), level 2 (L2; some problems) and level 3 (L3; extreme problems) for each dimension.

[c]Paired *t*-tests for HAI item 1–14 scores and reassurance seeking scores.

[d]Long-term physical conditions from case records as defined by Barnett *et al.* (22), *n* = 60 in both FAs and NAs.

[e]Long-term conditions if found in 10% or more participants in either group, McNemar's test for all binary long-term conditions.

patients; these were excluded because we found that they were not systematically recorded.

We recognize the relatively modest sample size and cross-sectional study design may explain why differences in unemployment, income and secondary health contacts were not statistically significant, and the wide confidence intervals for mental health and other long-term conditions. The study was exploratory so no formal power calculation was performed. A further potential limitation of this study is that recruitment took part in larger than average practices. There was a very low recruitment rate in the pilot practice (only 11%), but recruitment improved for the remaining four practices (24%) as practices became more able to identify appointments due to routine monitoring and health checks. Although only a low proportion of FAs and NAs responded to the study, there is enough similarity with anonymized record-based studies involving other varied practice samples (6,8,9,23,24) to believe that our results are representative of FAs in general.

Implications for research and clinical practice

A method to identify FAs that could be operationalized in routine care without further increasing workload for GPs and other practice staff has been used. Therefore, the results would be not only generalizable but could be easily replicated for both research and service needs within the UK. Nevertheless, even setting such simple cut-off criteria entails work for practice staff, e.g. to establish whether patients were seen face-to-face by GPs or practice nurses rather than by telephone or for new problems rather than for routine health care checks. The approach enabled the practices to use preset criteria in a manageable sample rather than count and check face-to-face or other contacts in records of all patients in the practice to calculate age- and gender-adjusted rates of FA in that practice.

The study data have several implications for developing psychological interventions for FAs in primary care. The health status of FAs is comparable to people with long-term conditions who receive more structured care, often with specialist input. Care of FAs may justify additional interventions to help GPs to manage and improve care for FAs, and impact their complex co-morbidities, but further intervention development and evaluation in randomized controlled trials are required to test their clinical and cost-effectiveness. The clinical complexity of FAs with multiple and diverse and often persistent physical and mental health problems, exacerbated periodically by major depression, suggests that psychological therapists will require a high level of expertise and need to regularly communicate with the GP to enhance the consistency and effectiveness of interventions. They will need to liaise with GPs about the complex interplay of different symptoms, medication side effects and any ongoing investigations or referrals. The current IAPT approach to provide short-term psychological interventions with little ongoing communication with the GP is unlikely to be sufficient. The results suggest a potential role for GPs in both helping FAs to understand the complexity of their problems, and brokerage utilizing care from IAPT and other social, mental and physical health providers as required as outlined by Bellón *et al.* (27). GPs may need supervision and support from experienced primary care practitioners or mental health to plan such proactive care.

Declaration

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