Why do they keep coming back? Persistent frequent attenders in primary care
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1. General discussion

The aim of this thesis was to provide more insight in frequent attenders (FAs) and persistence of frequent attendance in Dutch General Practice. Our main objectives were to define a method to select FAs in a normal practice situation, to study morbidity of (persistent) FAs, to determine the workload and costs of healthcare use of (persistent) FAs, to examine whether it would be possible to predict persistence of frequent attending and to determine which in particular psychosocial factors may explain this persistence. Finally we reviewed the literature on effective treatments for FA and we evaluated whether detection and treatment of depression and anxiety after one or two years of frequent attendance might be cost-effective compared to usual GP care as provided in The Netherlands.

2. Results

Part 1. Mapping frequent attenders in primary care

The first research question addressed how to select FAs in a regular GP practice. FAs are patients who consult their general practitioner (GP) much more often than their peers. As consultation frequency is strongly dependent on sex and age, we used a proportional definition and defined FAs as the top 10% of attenders per sex and age group. Using such a definition also had the advantage of comparability with other countries, regions and practices. To calculate attendance we used all face-to-face contacts with the GP during one year (consultations in the office and house-calls) and the attendance rates of all enlisted patients. We showed that, in a real life GP practice situation, dividing the practice population into, at least, three age-bands per gender is an acceptable method to select FAs, which can be used by practicing GPs.1
For the second research question we investigated the somatic, psychological and social problems of FAs. What are the differences between short-term and long-term FAs in this respect? What is the workload of a GP caused by (persisting) FAs? A retrospective study in the Hag-net-AMC database showed that most frequent attendance is temporary: Of all FAs during one year (1yFAs), 15.4 % persisted in frequent attendance during two consecutive years (persistent FA), which equaled 1.6% of all enlisted patients. However, the influence of FAs on the GP’s workload was substantial: Contacts of 1yFAs (by definition 10% of all enlisted patients) accounted for 39% of all face-to-face consultations; the contacts of the 1.6% of enlisted patients who became persistent FAs accounted for 8% of all consultations. Persistent FAs suffered more from social problems, feelings of anxiety, addictive behavior, and medically unexplained physical symptoms than 1yFAs and non-frequently attending patients (non-FAs). They differed less from 1yFAs and non-FAs where the prevalence of chronic somatic diseases is concerned.

The third research question addressed which readily available information noted in the patients’ Electronic Medical Record (EMR) predicts persistence of frequent attendance during 3 consecutive years (pFA). We showed that out of 3045 1yFAs, 470 (15.4%) became pFA. We selected indicators that were associated with becoming a pFA and constructed a prediction rule to predict which types of patients become pFA. With this prediction rule it was possible to change the prior probability of 15.4% to 3.3% (lowest value) or 43.3% (highest value), although the 10th and 90th centiles were 7.4 and 26.3%, respectively. The area under the receiver operating characteristics curve was 0.67 (c-statistic; 95% confidence limits 0.64 and 0.69). Using general cut-offs, our rule only moderately predicted which short-term FA continued to frequently attend in consecutive years.

The fourth research question concerned a validation of this prediction rule in another time frame in the same GP database and in another GP database in a different part of the Netherlands. Our validation study in a different part of the Netherlands (Eindhoven; the SMILE database of general practice) and in the same database but over a different timeframe (2009-2011), confirmed the results of the original study. The existing model (c-statistic 0.67) discriminated moderately with predicted values between 7.5 and 50% and c-statistics of 0.62 and 0.63, for validation in the original database and SMILE database, respectively. Data taken from the GP’s electronic medical records were only moderately indicative for which short-term FAs continued to frequently attend in consecutive years.

The fifth and sixth research questions addressed the costs of healthcare of FAs in primary and specialist care. Can these costs be explained by the morbidities of these FAs and/or by GP characteristics? Unadjusted mean 3-year expenditures were 5044 and 15,824 Euros for non-FAs and pFAs, respectively. We showed that after adjustment for all included confounders, costs both in primary and specialist care remained substantially higher and increased with longer duration of frequent
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attendance. As compared to non-FA, adjusted mean 3-year expenditures were 1723 and 5293 Euros higher for 1yFA and pFAs, respectively. Thus, these extra costs could only partly be explained by the increased morbidity of (p)FAs as registered by the GP. Our results suggested only little influence of GP characteristics on costs of (persistent) frequent attenders. These increased costs might be explained by inadequate patient-GP communication and (as yet) undiagnosed psychosocial morbidity.6

Part 2. Review of the literature

The seventh research question was to identify effective interventions to improve quality of life and lower attendance rate of FAs. This question was answered by a review of the literature to determine possible effective interventions to improve quality of life and lower attendance rate of FAs. Although we intended to perform a meta-analysis we were not able to pool the results because of the heterogeneity of the included studies. No study showed convincing evidence that an intervention improved quality of life or morbidity of frequent attending primary care patients, although a small effect might be possible in a subgroup of depressed frequent attenders. No evidence was found that it is possible to influence healthcare utilization of FAs.7 A intervention study, published after this review, which had a broad scope (a group of GPs assessing the reasons as to why a patient is frequently attending with subsequent targeted therapeutic measures) resulted in a significant and relevant reduction in frequent-attender consultations.8

Part 3. A prospective study of frequent attenders

The eighth research question addressed which (in particular psychosocial) factors are associated with persistence of frequent attendance in a prospective cohort of incident1yFAs. Is there a supra-additive effect of combinations of somatic, psychological and social factors? Epidemiological studies of FAs showed that psychological problems (depression, anxiety, somatoform problems) are all more prevalent in FAs compared to non-FAs.2,9,10 However, in prospective cohort studies, using a proportional definition of FA (the upper 10%), only psychological distress, low physical quality of life and a low educational level predicted persistence of frequent attendance over the next two consecutive years.11,12 In our prospective cohort of incident (new) frequent attenders, we confirmed the association of persistence of frequent attendance with psychological distress. We showed that psychological determinants (panic, other anxiety, negative life events, illness behavior, and low mastery, but not depression) are associated with persistence of frequent attendance. We found no evidence of synergistic effects of somatic, psychological and social problems and no strong evidence of effects of GP characteristics on persistence of frequent attendance. The ninth research question evaluated whether systematic detection (as measured
by the Patient Health Questionnaire) and treatment of depression and anxiety after one or two years of frequent attendance might be cost-effective compared to usual GP care.

Based on a cost-effectiveness analysis with data of the prospective cohort of chapter eight using a Markov simulation we concluded that systematic detection and treatment of depressed and/or anxious one-year- and two-year-FAs are unlikely to be cost-effective compared with usual GP care as provided in the Netherlands.

3. In summary

Patients with an age and sex-adjusted attendance rate ranking in the top 10 centile within a time frame of one year have more and multiple, somatic, psychological and social problems compared to their non-frequently attending peers. Somatic and psychosocial morbidity increases with longer duration of frequent attendance. Most frequent attendance is temporary and only about 2 % of the practice populations visits frequently during 3 or more consecutive years.

Information from GPs' electronic files is only a moderate indicator to identify which short-term FAs continue to frequently attend in consecutive years.

Frequent attenders, and in particular persistent frequent attenders, make more use of primary care services than non-FAs. Frequent attenders, and in particular persistent frequent attenders, also have considerably above-average costs in primary and specialist healthcare in comparison with non-FAs. Morbidity of the patient and characteristics of the GP do not fully explain these extra costs. Panic complaints, general anxiety, life events, illness behavior and low mastery are associated with persistence of frequent attendance. These morbidities and characteristics are not (always) registered by the GP and may, partly, explain these extra costs. Also personality characteristics and patient-physician communication may play a role. An extrapolation of the results from our cohort study using a Markov simulation among 1yFAs showed that systematic detection and treatment of depression and/or anxiety is unlikely to be cost-effective in comparison with usual GP care.

4. Strengths of this thesis

In this section we discuss the overall strengths of the work brought together in this thesis. For detailed information about a specific part of our research, please refer to the specific chapter.

Despite many studies in other countries with a strong GP system, to our knowledge this is the first attempt at studying characteristics of FAs in the Netherlands.
Most research presented in this thesis was embedded in the longitudinal GP database of the department of General Practice, AMC (Hag-net-AMC). In this database, GPs register medical problems over a long period of time. This database of GP-patients, combined with a prospective cohort, identified through this database, and with a health insurers’ database (with detailed information about healthcare expenditures), made it possible to answer research questions 2 to 6 (part I) and 8 and 9 (part III). As all GPs participating in the Hag-net-AMC receive regular feedback on their registration activities and, nowadays, are helped by automated computer algorithms, these registration data are of reasonable quality, especially for somatic and psychological problems.\textsuperscript{13-15} It is less clear to what extent GPs register social problems adequately. Since GPs register problems during consultations, we expect the quality of this registration to be higher for FAs (who have many consultations). However, differences in prevalence figures of diseases between registration networks are considerable and limit generalisation.\textsuperscript{15} These differences may be caused by differences between regions, or by registration and coding differences between GPs or by artefacts.\textsuperscript{15;16}

Being a long-time member of the steering committee of HAG-net-AMC and personally knowing many of the participating GPs, helped to secure participation and to optimise data quality. When convincing practices to participate in the (continuation of) our study or to complete missing data, it was beneficial to have an experienced, local GP to lead the study.

5. Limitations of this thesis

In this section we discuss the general limitations of the work laid down in this thesis. For detailed descriptions, please refer to the specific chapter.

First, we used a proportional definition of FA which has certain disadvantages: some patients may drop just below the cut-off (89th centile e.g.) the next year. However, definitions based on some absolute number of visits share this limitation (chapter 2). Second, we assumed that the so-called Problem List (a list of all patients’ problems as registered and coded by the GP in the electronic medical record) would give a comprehensive picture of the main morbidity of a patient. However, some registered problems can be overreported if resolved problems are not removed from this list or underreported if a prevalent problem is not registered on the Problem List by the GP. This could lead to over- and underestimation of the prevalence of these disorders and to information bias in the estimations of the effect on persistence of frequent attendance.\textsuperscript{17} Also GP differences in registration- and coding-discipline may be confounding factors.\textsuperscript{13;14} It is also unclear whether and to what extent FAs visit primary care for minor, transient, problems not captured by the Problem List.
Third, the participating GPs appeared to have relatively similar characteristics: Being embedded in one academic region, eighty-two percent of the GPs were involved in educating medical students, vocational training of future GPs and/or research activities. This may lead to non-detection or underestimation of the effects of GP characteristics.

Fourth, although we attempted to collect complete sets of patient characteristics and clinical data, other undocumented determinants of (p)FA may have been present. This is particularly true for the retrospective database studies, (part I) in which we had no influence on what was documented.

Fifth, this study is situated in an urban part of the specific Dutch healthcare system with more than average Surinamese and Ghanese patients. This may limit the extent to which our results can be generalised to other regions and countries.

Sixth, in the prospective cohort study (part III), about two thirds of the eligible 1yFAs refused to participate. However, because we focused on aetiology and ample analytical contrast within our sample, representativeness was not an issue like, for instance, in a survey predicting some election and we do not think this influenced our results negatively. Nonetheless, it was surprising how sensitive these patients appear to being called a FA. From our personal contacts with participating FAs we got the impression that they did not recognise themselves in the label ‘FA’. The term may be seen as pejorative and blaming to the patient. Therefore, in a British study a user panel preferred the term “regular attender”.

Finally, we analysed a cohort of new (incident) FAs, and our results are limited to frequent attendance over a period of 3 years. We cannot comment on frequent attending of longer durations.

6. Relevant literature

Frequent attendance has interested GPs, mostly in countries which use (largely) a capitation system for remuneration and where GPs use a list system. Over the last thirty years, a continuous flow of mostly descriptive articles about FAs has been published from the United Kingdom, Scandinavian countries, Spain and from Health Maintenance Organisations in the United States. Surprisingly, despite having largely a capitation payment system the Netherlands has been an exception. The only Dutch study we know of is a thesis about the association between personality and medical consumption (1980). That study indicated that “personality” (defined as neuroticism, somatisation) only increased medical consumption in the top 5% of attenders.

As expected, results in the literature differ depending on the definition of frequent attendance used. When no correction for age and sex is used the resulting
overrepresentation of elderly and female patients results in a high prevalence of somatic (multi)morbidity. Using the proportional definition on the other hand, results in a better representation of all ages and both sexes resulting in higher prevalence of psychological and social problems than without correction for age and sex.

In several studies, FAs are used to select a group of patients at high risk for distress, mental health problems, major depressive disorder or somatoform disorders/medically unexplained symptoms, but not for anxiety. Generally, screening- and treatment programs using frequent attendance as a selection criterion to diagnose a target disease had disappointing results in improvement of this target disease, partly because uptake and acceptance of screening and treatment in screened patients are generally low. In our opinion, using FAs to select a certain disease or problem disregards the strong multi-causal character of frequent attendance. Detection and treatment of just one underlying aspect is not likely to resolve the complex, multiple problems found in FAs. In this context, it is noteworthy that there is a wide range of studies about comorbid depression in somatic diseases, but that such knowledge is much less for anxiety as a comorbidity.

Reviewing the literature we found no evidence that specific interventions reduce healthcare utilization or improve quality of life of FAs in comparison with usual GP care. However, one more recent Spanish intervention study of good quality in IyFAs showed that a GP intervention reduced attendance in primary care in comparison with usual care. Bellón et al. applied a “7 Hypothesis + Team intervention” after 3 GPs received a 15h training in executing the intervention. The GPs held meetings to share analyses and reflections on their FAs and to make tailored plans for each FA. GPs also received emotional support in these meetings and were helped to generate strategies to deal with FAs. Numbers of consultations decreased by 5.08/year (p<.001).

7. Clinical and public health implications

This thesis distinguishes between short-term and persistent frequent attendance. Our results imply that in short-term FAs, persistence of frequent attendance is associated with anxiety, illness behavior, negative life events and low mastery. Thus, a proportion of pFA may be preventable by developing interventions to diminish or eliminate these causes. Adequate detection and treatment of these conditions in FAs may result in a better quality of life of these patients, less morbidity and a decrease in attendance and costs. Although treatment of anxiety in primary care patients has been shown to be effective, the effect of this treatment in preventing persistence of FAs is unclear and needs to be demonstrated in research. In a first attempt to explore this issue, using a Markov model
extrapolating the results of the prospective cohort study, we showed that systematic diagnostic assessment and treatment of depression and anxiety in FAs will probably result in minimal cost savings and health effects in comparison with FAs receiving usual care in primary care (chapter 9). However, knowing the high costs of (persistent) FAs it might be beneficial for these patients and for the budget problems in healthcare to test other interventions in (p)FAs. GP interventions to better the (medical) situation of FAs should target these patients broadly, at least including interventions which address present panic and anxiety complaints and low mastery. In addition, knowing the results of Bellon, interventions to diminish consultations frequency of FAs may also need to be targeted at the GP.

The Frequent attender: a typical GP patient

Currently, most research in general practice is focussed on individual, well defined, mono-causal issues and diseases. From a methodological perspective this is understandable. Diabetes, asthma or depression are easier research topics than multi-morbidity, headaches, deprivation and frequent attendance.

Similarly, in clinical general practice, GPs often prefer to focus on clear diseases, despite the sometimes low prevalence and/or lack of therapeutic options (e.g. in the case of COPD). The traditional diagnostic, treating, and consoling role of the life-long physician is more and more superseded by large-scale preventive and intervention programs. Large amounts of funding and effort are spent on programs reaching a relatively small number of patients, sometimes without much scientific evidence.

We think these trends disregard the complicated reality of everyday general practice. The 10% most frequently attending patients consume 40% of the GP's consultation time. These FAs are an important and, as shown in our study, expensive group of patients in general practice. Often, these FAs have complicated problems and suffer from a mix of interacting social, psychological and medical problems, which often cannot be classified in somatic or psychiatric (DSM-IV) diagnoses. Only a GP with a broad bio-psychosocial knowledge and approach is able to unravel this mix of problems and propose suitable treatment and guidance. Research has shown that even then, the proposed treatment has to suit the perception, expectations and wishes of the patient to be effective. In our opinion, such an integral approach is a better match for FAs than the pre-programmed approach of disease programs. Since in countries with a strong primary care orientation, the system's focus is on continuity of care, knowledge about the (family) background of the patient and bio-psychosocial care, the GP can best be the backbone of such an integral approach of FAs, if necessary supported by a psychologist. In this regard, the new approach in mental health care, where a formal DSM-diagnosis is needed before treatment by a psychologist...
or psychotherapist can start, can be seen as a, possibly counterproductive and costly downfall. 36

The results of our prospective cohort study also urge for more emphasis on anxiety problems in everyday general practice. The role of lack of mastery in persistence of frequent attendance calls for experiments to try to strengthen coping mechanisms of FAs. Possibly social interventions in FAs (targeted at assertiveness, housing and debts problems) may have better results than medical interventions.

**Stepped care approach**

We support the approach of a multifaceted diagnostic process and treatment for frequent attending patients, as advocated by Bellon. 8 Unlike his approach, we think such a program may be preferably directed at frequent attenders of longer duration (e.g. 2yFAs). Such a program must be tested first in a proper randomized clinical trial.

Until such results are available, we propose that General Practitioners identify their FAs, give them some sort of 'label' in the electronic medical record ("ruiter"), and try to implement a broad diagnostic and therapeutic approach in their usual care of these patients. A diagnostic interview, possibly supported by a psychiatric questionnaire (PHQ, 4-DKL, HADS), can help the GP to unravel the somatic, psychological and social background of the patient, and to formulate a targeted therapeutic approach.

8. **Implications for research**

We think further research should focus on the background of repeated or persistent frequent attendance. Also the role of the Problem List as proxy for FA's morbidity needs more clarification. A cohort with more incident FAs, use of standardized psychiatric interviews and measures of quality of life may provide more insight in the difference between PHQ diagnoses and diagnoses after a Structured Clinical Interview for DSM Disorders (SCID diagnosis) and the role of Quality of life measures. Subsequently, randomised trials may determine the extent to which interventions aimed at modifying anxiety disorders, illness behavior and mastery in this specific group of patients are acceptable to patients and improve quality of life, and reduce attendance and costs of (persistent) FAs.

Using a more diverse group of GPs (setting of the practice, age distribution, (non) training practices, (non) academic practices) could shed more light on the influence of the GP on (persistence of) frequent attendance.

Let's face the frequent attender not as heart sink but as a challenge for GP care! Frequent attenders deserve better care, not more care!
References


