Use of the PRIME-MD Patient Health Questionnaire for estimating the prevalence of psychiatric disorders in French primary care: comparison with family practitioner estimates and relationship to psychotropic medication use.

Joanna Norton, Guilhem de Roquefeuil, Jean-Philippe Boulenger, Karen Ritchie, Anthony Mann, Andre Tylee

To cite this version:


HAL Id: inserm-00194117
https://www.hal.inserm.fr/inserm-00194117
Submitted on 5 Dec 2007

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L’archive ouverte pluridisciplinaire HAL, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d’enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.
Title: Use of the PRIME-MD Patient Health Questionnaire for estimating the prevalence of psychiatric disorders in French primary care: comparison with family practitioner estimates and relationship to psychotropic medication use.

Norton Joanna (MSc)1*, De Roquefeuil Guilhem (MSc)1, Boulenger Jean-Philippe (MD, PHD)1.2, Ritchie Karen (PhD)1, Mann Anthony (MD, FRCPsych)1.3, Tylee Andre (MBBS, MD)3

1 Institut National de la Santé et de la Recherche Médicale (INSERM), U888, Hôpital La Colombière, Pavillon 42, 39 av. Charles Flahault, BP 34493, 34093 Montpellier Cedex 5, France
2 Service Universitaire de Psychiatrie Adulte, Centre Hospitalier Universitaire, 39 av. Charles Flahault, 34295 Montpellier Cedex 5, France
3 Health Services and Population Research Department, NIHR Biomedical Research Centre, Institute of Psychiatry, Kings College, London SE5 8AF, UK

* corresponding author

Norton Joanna: norton@montp.inserm.fr
Tel: 0033 4 99614570 Fax: 0033 4 99614579
ABSTRACT

**Objective:** the objectives of this study were to establish provisional psychiatric diagnoses using the Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PHQ) and to describe family practitioner (FP) case recognition, survey-day prescription of anxiolytic and antidepressant medication and overall consumption rates (medication use).

**Methods:** Between October 2003 and April 2004, 1151 consecutive patients (≥ 18 years old) of 46 FPs practicing in and around the city of Montpellier, France, completed the PHQ. During the consultation, FPs rated the severity of any psychiatric disorder.

**Results:** PHQ prevalence rates (FP case recognition percentages are given in parentheses) were as follows: 10.9% (36%) probable alcohol abuse/dependence, 11.3% (40%) somatoform disorder, 9.1% (75%) major depression, 7.4% (42%) for other depressive disorders, 7.5% (69%) for panic disorder, 6% (69%) other anxiety disorders.

The prescription rate for all study patients was 11.3%, ranging from 6.2% for those without a PHQ disorder, to 30.3% for those with a PHQ diagnosis of anxiety or depression to 48.2% for FP-recognised cases. The estimated survey-day consumption rate for these medications was 19.4%.

**Conclusion:** High consumption of anxiolytic and antidepressant medications in France is confirmed but not explained either by higher prevalence rates of psychiatric disorders as compared with other locations or by unusually high survey-day prescription rates. A possible explanation would be the organisation of the French health care system, which has multiple sources for obtaining medication.

Keywords: Case recognition, Patient Health Questionnaire, Family practitioner
1. Introduction

France has one of the highest rates of psychotropic medication use in Europe [1-5], with 12-month population consumption rates of 18.6% for anxiolytics and hypnotics and 6% for antidepressant medication [2]. 60%-75% emanate from family practice [6, 7]. However there has been little primary care research to help us understand the processes underlying these figures. Do they reflect high prevalence rates, better than usual case recognition rates or a low threshold or inaccurate response by family practitioners (FPs)?

The only published study of mental health among consecutive patients of French FPs is the World Health Organisation (WHO) collaborative study on Psychological Disorders in General Health Care Settings (WHO-PPGHC) [8]. That study was conducted in self-selected FP and occupational clinics in inner Paris and is likely to be unrepresentative of French family practice. Screening with the 12-item General Health Questionnaire (GHQ-12) [9] identified 29.5% as likely psychiatric cases. ICD caseness criteria [10] were met in 26.3% of cases, of which 50% were recognised by the FPs. Of case patients with depression recognised by the FP, 31.8% received antidepressant medication. Our own pilot study in Montpellier reported 30.6% of all cases as likely cases based on GHQ-12 score, of which 59.5% were recognised [11].

In France, until a recent change (January 2006) toward registration with a personal FP, patients could visit any and as many FPs or specialists as they wished - meaning that no single FP may know of or be responsible for prescriptions or referrals made for a patient. FPs usually work in solo practice in small premises without ancillary staff. Thus, a major obstacle to good mental health research is lack of privacy with no space for personal interviews outside of the one consulting room in use.

The development of the patient version of the Primary Care Evaluation of Mental Disorders (PRIME-MD) – Patient Health Questionnaire [12] opened new opportunities as it is the only...
self-rating instrument designed for this setting that provides DSM-IV [13] diagnoses (rather than scale scores) of five common psychiatric disorders (i.e., anxiety, mood, somatoform, alcohol and eating disorders). The PHQ is quicker to use than the original clinician-administered PRIME-MD [14] and has been shown to have a comparable level of diagnostic validity [12, 15]. In its U.S. validation study in eight primary care sites, the prevalence rates were 28% for any psychiatric diagnosis, of which 16% were for any mood disorder (10% for major depression), 11% for any anxiety disorder, 7% for any eating disorder and 7% for probable alcohol abuse/dependence. To the best of our knowledge, the PHQ has never been used, except for the depression module [16-18] and the panic module [19], in European primary care [20-22].

The aim of this paper was to estimate crude prevalence rates of common psychiatric disorders in a representative sample of consecutive FP patients in a region of France. This is the first study of its kind in France. We also report FP agreement with PHQ caseness as well as the prescription and reported consumption of antidepressant and anxiolytic medications.

2. Methods

2.1 Setting

Montpellier is a university town of 230,000 inhabitants [23] in the southern part of France. While having a large student population, it also has an expanding older population due to the attraction of its location for retired people, making the age distribution very similar to the national profile [23]. The surrounding areas are agricultural and there is some light industry. Montpellier has also taken in migrants following the Spanish and Algerian civil wars. The clientele of FPs is therefore sociodemographically very mixed.
The study was carried out in 2 urban psychiatric catchment areas, covering two-thirds of Montpellier, with 249 practising FPs for a population of 140,000, and in a nearby semi-rural catchment area with 73 practising FPs for a population of 80,000. Because students are strongly represented in the urban population and retired people in the rural population, we aimed to create a sample that reflected a balance between semi-rural and urban practices. To study psychotropic medication prescription rates, we restricted the main sample to FPs declaring they prescribed psychotropic medication. Approximately 8% of FPs in France specialise in delivery of alternative therapies (principally acupuncture and homeopathy) and prescribe psychotropic medication very occasionally only [24]. It was therefore necessary to include a sub-sample of nonprescribing FPs in order to best estimate prevalence rates.

To maintain the urban/semi-rural FP balance, we contacted all semi-rural FPs and a random selection of two-thirds of urban FPs by telephone. FPs who declared that they prescribed psychotropic medication were recruited for the main sample. Non-prescribing FPs were recruited separately and nonrandomly after a visit by a researcher to ensure that data collection requirements for the study could be met.

The acceptance rate among prescribing FPs was 32.8% but, unexpectedly, it was much higher in the semi-rural sector as compared with the urban sector (49.2% (n=30) and 23.9% (n=27) respectively). Thus, half of the semi-rural FPs were randomly selected to maintain the urban/semi-rural ratio in our sample. There were no age and sex differences between the participating and nonparticipating prescribing FPs. In all, 46 FPs participated, 41 prescribing FPs (27 urban, 14 semi-rural) and 5 nonprescribing FPs (4 urban, 1 semi-rural).
2.2 Patient Selection

For each FP, a research assistant approached consecutive patients to complete self-administered questionnaires in the waiting room until 25 patients per FP had participated. Exclusion criteria were being younger than 18 years, not living in the study area and not consulting for oneself. Participants’ names were not recorded; an identification number linked patient questionnaires to FP notes.

Data were collected by five research assistants between October 2003 and April 2004. The patient response rate was 89.8% and was the same for both study areas and sexes. However, refusals increased with age of patient. Non-eligibility according to exclusion criteria and main reasons for refusal are shown in Figure 1. 1151 subjects were included in the analysis.

2.3 Instruments

During the consultation, FPs completed a short questionnaire relating to each patient’s presenting symptoms, the presence of physical illness and/or psychological disorder with his or her estimation of severity and diagnosis, treatment offered and actions undertaken [25]. FPs and patients were blind to each other’s responses.

Six patient self-administered questionnaires were distributed to the patients. We report data from a socio-demographic questionnaire; medication consumption based on the Client Service Receipt Inventory (CSRI) [26]; and the five modules of the PHQ [12] used in the study (anxiety, panic, mood, somatoform and alcohol).

2.4 Translation

All instruments except for the CSRI and the PHQ were available in French. The PRIME-MD had been translated into French [27] and was used to construct a French version of the PHQ.
The CSRI was translated into French and both questionnaires were back-translated into English by independent bilingual researchers.

2.5 Coding

PHQ diagnosis: The PHQ assesses disorders meeting DSM-IV criteria [13] (e.g. major depression, panic, other anxiety disorder) and sub-threshold disorders (e.g. other depressive disorders, probable alcohol abuse/dependence and somatoform disorder). Diagnoses are obtained by applying algorithms to the symptom checklists. Presence of a somatoform disorder requires that the clinician should rule out any “adequate biological explanation”. As we have no external clinical interview in our study, cases meeting criteria for somatoform disorder but rated by the FP as moderately or severely physically ill were reclassified as noncases.

FP caseness and diagnosis: Psychiatric status was rated by the FP as follows: completely normal; some symptoms; mild case; moderate case; severe case. Patients rated as mild, moderate or severe cases constitute FP ratings of a psychiatric case. Additionally, for the three case levels, the FPs were asked to provide a provisional diagnosis. Diagnoses written down by the FPs were coded independently by two psychiatrists. FPs’ own diagnostic terms were used if they matched psychiatric categories. The category of “anxiety-depressive symptoms” was created to cover a wide range of terms that reflect a disturbed emotional state with no clear diagnostic term (e.g. neurosis and labile emotional state). Results are presented for primary diagnosis only.

FP case recognition: PHQ cases, overall and for each diagnostic category, were compared with the FP’s rating as a psychiatric case, whatever the FP’s diagnosis. PHQ and FP diagnosis did not have to correspond for a case to be considered as recognised by the FP.
Psychotropic medication prescription and consumption: We coded compounds according to the French translation of the WHO ATC classification [28]. The four categories of psychotropic medication— anxiolytic, hypnotic, antidepressant and other (mainly opiate substitutes) medications—were grouped for descriptive purposes. For further analyses, the two categories— anxiolytic and antidepressant medications were combined to form the FP prescription rate if they were prescribed on the survey-day. A second variable, the declared consumption rate, concerns patients who declared that they were already taking anxiolytic or antidepressant medication before seeing their FP. Patients were asked to write down the names of medications that they were currently taking for a psychological or sleeping problem and when unknown, the reason why each medication was taken. Declared consumption was ignored for 9 patients unable to name their medications. The FP prescription rate and the declared consumption rate were grouped to form the estimated consumption rate.

2.6 Analysis

Only descriptive analyses only were carried out. Percentages are presented for categorical variables whereas means and standard deviations are presented for continuous variables. Prevalence rates are given as percentages with their 95% confidence intervals (CIs). Cohen’s k score was used to measure agreement between PHQ and FP caseness.

To study prescription and consumption rates (Table 3), we defined caseness by a PHQ diagnosis of any mood (major or other depressive disorder) or anxiety (panic or other anxiety disorder) disorder.

Analyses were carried out on the 46 FPs as, in practice, some of the non-prescribing FPs did actually prescribe psychotropic medications. However, because they were recruited
differently, a separate analysis was carried out with only the 41 recruited as prescribing FPs to check that results were not altered.

Statistical analyses were performed using SAS version 9.1 (SAS Institute, Cary, NC, USA).

3. Results

3.1 Description of FPs

31 urban FPs and 15 semi-rural FPs participated in the study. Of all FPs, 56% were male. Their mean age was 45.3 years (S.D.= 7.9); it was the same for both sexes. Of the FPs, 60% had been practicing for at least 10 years and only four were working part-time. In addition, 80% declared having had some form of training in mental health in the previous 3 years. Two-thirds of FPs practiced entirely solo; one-third shared premises but practiced mostly alone.

43 FPs contributed 25 patients, one FP contributed 24 patients and two FPs contributed 26 patients.

3.2 Description of patients

Mean age (44.5 years, S.D.= 18.9) did not differ according to gender but was higher in the semi-rural zone (47.9 years, S.D.=18.0) than in the urban zone (42 years, S.D.=18.8) (p<0.001). Half of subjects (49.5%) were married or living with a partner. 33% had a higher education degree. 14% were students (18.4% of urban patients and 5.3% of rural patients). 26% were retired (20.9% of urban patients and 35.6% of rural patients) (Table 1).
3.3 Prevalence of psychiatric disorders

Table 2 shows the prevalence rates of psychiatric disorders by diagnostic category as obtained from the PHQ. Of all patients, 34.1% (95% CI=31.3-36.9) met criteria for at least one of the psychiatric disorders investigated by the PHQ.

The FPs rated 28.6% (95% CI=26.1-31.3) of the patients as having a psychiatric disorder. FP diagnoses were: anxiety (34.3%), depression (20.1%), anxiodepressive symptoms (18.8%), reaction to a specified event (8.8%), psychotic (4.9%), sleeping (3%), personality (2.4%), and functional (0.9%) disorders, alcohol abuse (0.6%), and dementia as well as other disorders (2.4%). For 2.8% of FP cases, the FP was unsure and did not establish a diagnosis.

3.4 FP case recognition

Table 2 shows the percentage of PHQ cases (or case patients) overall and for each PHQ diagnostic category recognized as having a psychiatric disorder by the FP, whatever the FP’s diagnosis. Recognition was lowest for alcohol problems and highest for major depression.

Overall agreement as measured by the k coefficient [29] between the FP and the PHQ for all diagnostic categories was 0.26 (95% CI=0.20-0.32). Of the PHQ case patients, 45.1% (95% CI=40.1-50.1) were identified by the FP as having a psychiatric disorder whereas 79.9% (95% CI=77.0-82.8) of patients with no PHQ diagnosis were rated by the FP as noncases.

Agreement between specific diagnostic categories was not investigated. However, of the diagnoses given by the FP, agreement with PHQ caseness irrespective of the disorder was highest for depression (65.2% of FP depression cases met PHQ criteria), followed by anxiodepressive symptoms (64%), anxiety disorders (51%) and others (41%).

3.5 Prescription and consumption of antidepressant and anxiolytic medications

Of the 1151 patients, 14% received a prescription for a psychotropic medication on the survey day and 11.3% did so for either anxiolytic (7.6%) or antidepressant medication (5.9%). Of the
sample, 15.6% declared they were already taking antidepressant (6.3%) or anxiolytic (11.4%) medication. The estimated consumption rate for both medications was 19.4%: 14.6% for anxiolytic medication and 8.7% for antidepressant medication.

Table 3 shows the estimated anxiolytic and antidepressant medication consumption and survey-day prescription rates. Both estimated consumption and prescription rates are four- to five-fold higher for PHQ cases compared with non-cases. Whereas FPs prescribed anxiolytic or antidepressant medication to 48.2% of recognised cases, 27.3% of false-positive cases also received a prescription. Of survey-day prescriptions, 92.3% were for patients considered by the FP as having a psychiatric disorder, compared with 56.3% being for patients with PHQ depression or anxiety (results not shown).

FPs were asked whether survey-day prescriptions were renewal prescriptions or newly initiated prescriptions (i.e., no other such prescription had been made in the past 3 months). 30% of antidepressant and/or anxiolytic prescriptions made on the survey-day were new prescriptions. Whether renewal or newly initiated prescriptions, the percentages of patients rated by the FP as having a psychiatric disorder (92.3%) and reaching caseness of anxiety or depression on the PHQ (56.3%) did not change.

Not surprisingly more than three times as many patients who declared on the CSRI that they were already taking antidepressant or anxiolytic medication were considered by the FPs as having a psychiatric disorder (69.8% vs. 21%) and reached depression or anxiety criteria on the PHQ (51.7% vs. 15.2%). These are reflected in the survey-day prescription rates with only 12.3% of PHQ depression or anxiety patients who declared no current anxiolytic or antidepressant medication consumption receiving a prescription as compared with 58.7% of those declaring current consumption. Similarly, among patients identified as having a psychiatric disorder by the FP, 20.6% of those declaring no current treatment received a prescription as compared with 62.4% of those declaring they were already taking
antidepressant or anxiolytic medication. Surprisingly, 41% of patients for whom treatment was newly initiated according to the FP declared in their answers to the CSRI to be already taking antidepressant or anxiolytic medication.

4. Discussion
To the best of our knowledge, this is the first study of psychiatric disorders in French primary care among consecutive patients of FPs likely to be representative of those practicing in the study region [30], which is considered to be demographically close to France as a whole [23]. It is also the first time the PHQ, other than the depression and panic modules [16, 18, 19], was used in family practice in Europe. The main findings are as follows: other than for alcohol problems, the prevalence rates of psychiatric disorders investigated with the PHQ in our sample are similar to that found elsewhere in Europe and the USA [8, 12]. FP recognition rates are similar, or even higher, to those found in the PHQ validation study [12]. Estimated consumption of antidepressant and anxiolytic medication on the survey-day is high. This is not a reflection of high prevalence rates; neither can it be explained by unusually high FP prescription rates on the survey day.

4.1 Study limitations
We had no external second stage psychiatric interview; thus, we could only estimate crude prevalence rates and were not able to validate the PHQ in French general practice. The full version of the PHQ has been validated among non-specific primary care patients in the USA only. In Europe, only specific modules of the PHQ have been validated: the anxiety and mood modules in otorhinolaryngology outpatients in Belgium [21]; the depression module among medical outpatients and FP patients in Germany [16, 18]; and the panic module among medical outpatients, outpatients of a psychosomatic clinic and FP patients in Germany [19].
Our FP participation rate was low (33%) but comparable to that achieved in other studies aiming at a representative sample of FPs [31]. Self-selection may have meant that FPs most interested in mental health took part in the study, as indicated by 80% reporting mental health training in the previous 3 years. This selection may have led to an overestimation of FP diagnostic rates and agreement with case-finding methods [32]. We were not able to follow FPs on home visits; thus, the sample may not be fully representative of each FP’s activity. We obtained a very satisfactory response rate, indicating acceptability of the PHQ as a research instrument in this setting. Older patients were more likely to turn down participation, which may have biased PHQ prevalence rates, but the direction of this is uncertain. The age and sex distribution of the sample was close enough to those of the populations in the study areas to suggest that our sample is representative in those respects. Cross-sectional studies on recognition and treatment of psychiatric disorders run the risk of overestimating both false-positives – as some cases previously diagnosed may be in remission at the time of the survey – and false-negatives – as some cases may be diagnosed at a later stage.

4.2 Prevalence rates

The prevalence rates for depression and anxiety were extremely close to those found in the PHQ validation study in the USA (major depression=9.1%, subthreshold depression=7.4%, panic disorder=7.5%, other anxiety disorders=6%) [12]. However, the prevalence of probable alcohol abuse/dependence was around a third higher in the current study than in the validation study. The PRIME-MD has been used in a study on 86 family practices throughout Belgium [20]. The rate for probable alcohol abuse/dependence was similar (10.1%) to the rate found in the current study; whereas rates for major depressive disorder (13.9%), other anxious disorders (16.2%) and somatoform disorder (18%) were higher, panic disorder (2.8%) was lower. These may reflect differences between the PRIME-MD and the PHQ. In addition, the
higher prevalence rates may be explained by the exclusion in the Belgian sample of patients consulting for administrative reasons alone, presumably with few symptoms. It is difficult to compare our prevalence figures with those of the Paris centre of the WHO-PPGHC study as the latter study used ICD-10 diagnostic criteria and a clinician-administered psychiatric interview. There appear to be no striking differences, even for alcohol problems, however [8]. The higher prevalence rates of probable alcohol abuse/dependence in ours and the Belgian study compared with the U.S. validation study could reflect reality or perhaps be due to a lack of cross-cultural validity of the alcohol module. Our figure is in keeping with high rates found in other population surveys (UK=22% [33]; The Netherlands=17.3% [34]; Europe (25 countries)=15%[35]) and FP studies (France=18%[36]; Belgium=10%[20]; Australia=15% [37]).

In the WHO-PPGHC study, rates are 5% for harmful use of alcohol and 4.3% for alcohol dependence for the Paris sample, compared to 8.6% and 1.5% respectively, for the Seattle sample. These suggest that although overall rates are similar, there are much more severe forms of alcohol abuse in France than in the United States [8, 38, 39].

Overall, as our prevalence figures are so similar to those found elsewhere, higher psychotropic medication consumption in France cannot be explained by raised levels of morbidity to be treated [40].

4.3 FP agreement with PHQ caseness

As found elsewhere [12, 41-44] FP agreement with PHQ caseness increased with severity of the disorder. French FPs identified higher numbers of PHQ case patients with major depression (75%) and anxious disorders (66.7%) as having a psychiatric disorder. Probable alcohol abuse/dependence was recognised only in a third. Despite that, agreement rates are higher than those reported in the original PHQ study [12], in keeping with the findings of the
WHO-PPGHC study where higher recognition rates were found in Paris [8] than in Seattle [39]. Our FP inclusion bias discussed above could be one explanation for this finding.

4.4 Survey-day prescription and consumption of anxiolytic and antidepressant medication

On the survey day, FPs prescribed psychotropic medication to 14% of all study patients, which is slightly higher than the rate reported in the WHO study across centres (11.5%) [45]. Of the sample, 11.3% of the sample received anxiolytic or antidepressant medication, 5.9% antidepressant medication and 7.6% anxiolytic medication. In 139 East London practices, Hull et al (2005) calculated annual prescribing rates for anxiolytic and antidepressant medications as the mean of 2-year average daily quantities (ADQ) prescribed for each medication divided by the practice population. Across practices, the median prescribing rate (ADQs) for all antidepressant medications was 7.97, and that for anxiolytics and hypnotics 2.27 [46]. These rates cannot be directly compared with our percentage figures but give an indication of the high prescription rates in UK primary care.

Anxiolytic and antidepressant medications are prescribed to a sub-group of patients (6.2%) not meeting case criteria for anxiety or depression. This rises to 27.3% when the latter patients are nonetheless considered as having a psychiatric disorder by the FP. This is in keeping with the finding that FP prescriptions typically follow FP recognition (92.3% of survey-day prescriptions are for patients considered by the FP to have a psychiatric disorder).

Also, as found elsewhere [45, 47-50] approximately half (56%) of patients receiving such prescriptions reach criteria for formal diagnoses.

Roughly 20% of patients were prescribed with or declared taking antidepressant or an anxiolytic medication at the time of the study, which confirms the high consumption of antidepressant and anxiolytic medications in the French population [2, 3]. This rate is even
higher than the 14% consumption rate reported in the ESEMeD study [2], which is to be expected as the latter was carried out in the general population. To the best of our knowledge, there are no published or reported estimated consumption rates for FP patients from the USA or other European countries with which our rates can be compared.

The gap between survey-day prescription and estimated consumption rates found in our study indicates that FP prescription rates alone cannot explain the high consumption of antidepressant and anxiolytic medications. The gap is wider for anxiolytic medication than antidepressant medication. The organisation of primary care in France may offer an explanation for this: patients have access to any FP or specialist, implying multiple sources of prescriptions. As found in our study, FPs may not always know who is already taking medications and may therefore prescribe again, making it possible for patients to cumulate prescriptions. For antidepressant medication, only 60% of prescriptions emanate from family practice [6]. Family practice [48] and out-of-hospital specialist practice in France are fee-for-service and patient-led systems in which patients are able to visit any doctor and the loss of a patient to another doctor represents loss of income, which could lead to compliance with patient demand. It is thus relatively easy for patients who wish to continue medication to do so [40].

5. Conclusions

This study represents, to our knowledge, the first estimation of the prevalence of psychiatric disorders in consecutive patients of a representative sample of French FPs. The PHQ worked well and produced prevalence rates, other than for alcohol problems, very similar to those found in the PHQ validation study, underlining the robustness of the tool in different primary care settings.
Our findings confirm the high consumption of anxiolytic and antidepressant medications in the French population. However, this cannot be explained either by higher prevalence rates of psychiatric disorders as compared with other locations or by high prescription rates on the survey day. A possible explanation is the organisation of the French health care system which had, at the time of the study, many different sources from which medication could be obtained.

We used the PHQ as our standard diagnostic instrument as it identifies probable DSM-IV cases. The study FPs, as elsewhere in the world, differ in diagnostic and prescription habits from DSM-IV criteria. However, it is against these criteria that most medications have been evaluated. We believe that a move toward DSM-IV-based practice should therefore be recommended. The next step is thus to test the utility of day-to-day use of the PHQ in French family practice, as done in the validation study [12].

Acknowledgments:

The corresponding author certifies that she had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. Authorization to translate and use the PRIME-MD® Patient Health Questionnaire© 1999, Pfizer Inc. was given by Dr. Robert L Spitzer who can be contacted for research information at rls8@columbia.edu.

This work was supported by a grant from the French Ministry of Research as well as an unconditional grant from Lilly Pharmaceuticals. The 46 study FPs were given 150€ for their participation.

We would like to thank all the patients and FPs who participated in the study, and the research assistants who helped collect code, and enter the data. Our gratitude also goes to Bruce Rollman, who kindly reviewed the manuscript prior to submission.
References


Fig. 1. Flow of study patient recruitment

No. of patients approached for participation
2169

No. of patients non eligible
860

Reasons for non eligibility:
- aged under 18 N=343
- not living in study zone N=217
- poor level of French/other communication problem N=83
- too sick N=26
- no waiting time N=36
- pharmaceutical representative N=119
- has already answered N=34

No. of patients eligible
1309

Refusals N = 153 (11.7%)

Main reasons for refusal:
- none N=37
- too tired or feels too old N=31
- not interested N=18
- questions too personal N= 17
- in a rush N= 11

No. of participants
1156

3 Subjects excluded:
- did not consult N=2
- aged under 18 N=1

No. of subjects in analysis
1151
Table 1 – Socio-demographic characteristics of the FP patients

<table>
<thead>
<tr>
<th>Socio-demographic characteristics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>1151</td>
</tr>
<tr>
<td>Urban study setting (%)</td>
<td>67.3</td>
</tr>
<tr>
<td>Female sex (%)</td>
<td>61.4</td>
</tr>
<tr>
<td>Age (years) [mean (s.d.)]</td>
<td>44.5 (18.9)</td>
</tr>
<tr>
<td>Age range (years) (%)</td>
<td></td>
</tr>
<tr>
<td>&lt;30</td>
<td>29.5</td>
</tr>
<tr>
<td>30-49</td>
<td>31.6</td>
</tr>
<tr>
<td>50-64</td>
<td>19.2</td>
</tr>
<tr>
<td>≥65</td>
<td>19.7</td>
</tr>
<tr>
<td>Marital status (%)</td>
<td></td>
</tr>
<tr>
<td>Married/living with partner</td>
<td>49.5</td>
</tr>
<tr>
<td>Single</td>
<td>33.4</td>
</tr>
<tr>
<td>Divorced/Seperated</td>
<td>10.8</td>
</tr>
<tr>
<td>Widowed</td>
<td>6.3</td>
</tr>
<tr>
<td>Education (%)</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>11.4</td>
</tr>
<tr>
<td>Very low</td>
<td>16.8</td>
</tr>
<tr>
<td>Low</td>
<td>19.7</td>
</tr>
<tr>
<td>Intermediate</td>
<td>18.8</td>
</tr>
<tr>
<td>High</td>
<td>33.3</td>
</tr>
<tr>
<td>Occupation (%)</td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>38.0</td>
</tr>
<tr>
<td>Unemployed</td>
<td>10.6</td>
</tr>
<tr>
<td>Retired</td>
<td>25.5</td>
</tr>
<tr>
<td>Student</td>
<td>14.1</td>
</tr>
<tr>
<td>Housewife</td>
<td>4.8</td>
</tr>
<tr>
<td>Other</td>
<td>7.0</td>
</tr>
<tr>
<td>French for primary language (%)</td>
<td>85.0</td>
</tr>
<tr>
<td>PHQ disorders</td>
<td>Prevalence rates [% (95% CI)]</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Probable alcohol abuse/dependence</td>
<td>10.9 (9.1-12.7) (n=124)</td>
</tr>
<tr>
<td>Somatoform disorder</td>
<td>11.3 (9.5-13.1) (n=129)</td>
</tr>
<tr>
<td>Any mood disorder:</td>
<td></td>
</tr>
<tr>
<td>Major depressive disorder</td>
<td>16.5 (14.3-18.7) (n=189)</td>
</tr>
<tr>
<td>Other depressive disorder</td>
<td>9.1 (7.4-10.8) (n=104)</td>
</tr>
<tr>
<td>Other anxiety disorder</td>
<td>7.4 (5.9-8.9) (n=85)</td>
</tr>
<tr>
<td>Panic disorder</td>
<td>7.5 (6.0-9.0) (n=85)</td>
</tr>
<tr>
<td>Other anxiety disorder</td>
<td>6.0 (4.6-7.4) (n=68)</td>
</tr>
<tr>
<td>All</td>
<td>34.1 (31.3-36.9) (n=384)</td>
</tr>
</tbody>
</table>
Table 3 - Anxiolytic and antidepressant survey-day prescriptions and reported consumption, according to PHQ diagnosis and FP case recognition (n=1139)

<table>
<thead>
<tr>
<th>PHQ diagnosis of any mood or anxiety disorder (panic or other)</th>
<th>Case (n=238)</th>
<th>Non-case (n=901)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Antidepressant/anxiolytic prescription/consumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>all cases</td>
<td>Recognised as case by FP</td>
<td>all non cases</td>
</tr>
<tr>
<td>Survey-day prescription</td>
<td>30.3 (n=72/238)</td>
<td>48.2 (n=67/139)</td>
</tr>
<tr>
<td>Estimated consumption*</td>
<td>46.2 (n=110/238)</td>
<td>69.1 (n=96/139)</td>
</tr>
</tbody>
</table>

* survey-day prescription or current consumption of anxiolytic or antidepressant medication reported by patient