Widespread Underrecognition and Undertreatment of Anxiety and Mood Disorders: Results From 3 European Studies

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Data from the World Health Organization (WHO) Collaborative Study on Psychological Problems in General Health Care, which was conducted in 26,422 primary care attendees in 14 countries worldwide, and from the Institut National de la Santé et de la Recherche Médicale (INSERM) study, which was conducted in over 2400 consecutive primary care patients in France, demonstrate the high prevalence of major depression in general practice (13.7% and 14.0% in each study, respectively). These 2 studies are supported by the more recent European Study of the Epidemiology of Mental Disorders (ESEMeD), which was conducted in over 21,400 adults from the general populations of 6 European countries and which revealed a lifetime prevalence rate for major depression of 13.4%. Despite this high prevalence, both the WHO and INSERM studies revealed that only 54% to 58% of depressed patients were recognized as "psychiatric cases" by their general practitioner and only 15% to 26% were given a specific diagnosis of depression. Even when cases were recognized, treatment was frequently inappropriate. In the WHO study, only 43% of patients correctly diagnosed with depression by their general practitioner were prescribed an antidepressant, and only 31% of patients recognized as "anxious" received an anxiolytic agent (14% were prescribed an antidepressant). In the ESEMeD study, only 4.6% of adults diagnosed with depression were using antidepressants exclusively, and 18.4% had used anxiolytic medications exclusively. The willingness to prescribe antidepressants and anxiolytic agents is influenced, in part, by diagnosis, patient age and gender, comorbidity (and severity), and the number of spontaneous psychological complaints. *(J Clin Psychiatry 2007;68[suppl 2]:36–41)*

Mental disorders, particularly depression and anxiety, are a common cause of presentation to primary care throughout the world, whether as a direct result of the condition itself or because of indirectly related complaints. Despite improved awareness of mental disorders, many psychiatric cases are difficult to diagnose initially, because of a host of patient-related and physician-related barriers. The result is that these disorders are often unrecognized. Even when patients' cases are recognized, confidence in delivering a specific diagnosis is generally low among primary care physicians, and, if offered, treatment is frequently inappropriate.

This article will examine treatment patterns for depression and generalized anxiety disorder (GAD) using data from 3 studies: the World Health Organization (WHO) Collaborative Study on Psychological Problems in General Health Care, the Institut National de la Santé et de la Recherche Médicale (INSERM) study, and the European Study of the Epidemiology of Mental Disorders (ESEMeD). INSERM is a French national scientific and research organization that is the equivalent of the National Institutes of Health in the United States. This study was conducted in a representative sample of general practitioners (GPs) in France. The ESEMeD project was a large collaborative effort between investigators from 6 European countries and the wider initiative of the WHO World Mental Health (WMH) Surveys. Its aim was to expand knowledge of the prevalence, burden, and care of individuals with mental disorders in Europe.

WHO Study on Psychological Problems in Primary Care

The WHO Collaborative Study on Psychological Problems in General Health Care examined the prevalence, associated disability, management, and outcome of mental disorders in primary care attendees in 14 countries worldwide.[1] Conducted between 1991 and 1992, the WHO study was a large multicenter investigation that used a 2-stage recruitment process to maximize the number of psychiatric cases enrolled.

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In total, 26,422 consecutive patients (aged 15–65 years) who had consulted primary care centers for medical reasons were interviewed using the 12-item General Health Questionnaire (GHQ). Patients were stratified according to GHQ score (low, intermediate, and high). All individuals with a high score underwent second-stage screening, along with 35% of those with an intermediate score and 10% of those with a low score. Center-specific cutoff points were determined so that 60% of the final sample would comprise individuals with a higher GHQ score; 20%, with an intermediate score; and 20%, with a lower score. Physicians recorded details of each consultation, including the reason for contact, severity of physical and psychological disease, psychiatric diagnosis (if given), and nature of any treatment provided, resulting in a total study population of 5438 individuals.[1]

While the GHQ is a useful tool for assessing symptoms and distress caused by depression and anxiety disorders, it is not diagnosis-specific. Hence, during the second stage of the screening process, patients were interviewed by trained individuals using the Composite International Diagnostic Interview-Primary Health Care Version (CIDI-PHC). Diagnoses were based on *International Classification of Diseases,* Tenth Revision, (ICD-10) criteria for current (1-month) and lifetime mental disorders. Associated disability and health-related quality of life were also assessed using validated instruments. All patients meeting ICD-10 criteria for "psychiatric cases" or "borderline cases" of mental disorder and 20% of those who did not were followed up after 3 months and 1 year.

INSERM Study

The INSERM study was conducted in Paris, France, between 1996 and 1997 and included 2419 patients (aged 18–70 years) who presented consecutively to a representative sample of 164 GPs.[2] Patients were screened using the self-rated Mini International Neuropsychiatric Interview (MINI).[3] All individuals meeting full or subthreshold criteria for depression, along with 2% of those who did not meet criteria for a psychiatric disorder—a total of 601 individuals—underwent a full MINI structured interview conducted by a specialist interviewer. Of these, 238 were found to be depressed and were followed up for 6 months. An independent GP assessment was also conducted in order to explore the identification rate of depressed and GAD patients by their GP. The diagnosis generated by the structured interview was considered the gold standard. Comprehensive information on treatment and examinations prescribed by this or another GP was also collected.[2]

ESEMeD Study

ESEMeD was a cross-sectional study conducted in a representative sample of 21,425 non-institutionalized adults ≥ 18 years old (including those 65 years and older) from the general populations of Belgium, France, Germany, Italy, the Netherlands, and Spain.[4] The instrument used to assess mental disorders was a new version of the CIDI developed in conjunction with the Coordinating Committee of the WHO WMH 2000 Initiative.[5] This comprehensive, fully structured, diagnostic WMH-CIDI questionnaire provides lifetime and current diagnoses of mental disorders according to the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, (DSM-IV) and the ICD-10 and also allows for the assessment of clinical severity. Trained personnel administered the CIDI by home interviews from January 2001 to August 2003 using Computer Assisted Personal Interview technology. Data quality was controlled to ensure reliability and validity of the information obtained. ESEMeD provides a comprehensive overview of the epidemiology of mental disorders in Europe, covering prevalence (lifetime and 12-month), proportion of comorbidities, disability and quality of life, use of mental health services, and consumption of psychotropic medications.

PREVALENCE AND RECOGNITION OF MENTAL DISORDERS

Mental disorders were prevalent in the WHO study, affecting 24% of primary care attendees.[6] Major depression was detected in 13.7% of participants; minor depression, in 3.6%; and dysthymia, in 3.6% in the French center of the WHO study.[7] The INSERM study reported similar prevalence rates for major depression (14.0%), minor depression (3.1%), and dysthymia (2.1%) in French patients consulting their GP consecutively.[2] In the ESEMeD study, lifetime prevalence rates of 13.4% for major depression and 4.4% for dysthymia were reported.[8,9] The prevalence of minor depression was not reported in this study.

Overall, the numbers of depressed individuals recognized as "psychiatric cases" by their primary care physician were similar in the 3 studies; in the WHO study, 54% of patients were identified as having a mental disorder, compared with 58% in the INSERM study (Figure 1).[10]

Specific diagnoses were more accurate in the INSERM study than in the WHO study; in the former, more patients were diagnosed correctly with major depression (26% vs. 15%, respectively).[10] The INSERM study was conducted in the late 1990s, while the WHO study was performed in the early 1990s, and it is likely that this pattern reflects an increased awareness of mental disorders, particularly depression and anxiety, in primary care—a probable result of a combination of educational initiatives and changing social attitudes to mental disorder in recent years.

In the ESEMeD study, 25.9% of the individuals questioned reported a lifetime presence of any mental disorder.[8,9] Prevalence estimates of mental disorders were determined by whether the respondents' past or current symptomatology met the 12-month or lifetime diagnostic criteria for a DSM-IV disorder. A total of 14.7% of respon-

Figure 1. Recognition of Major Depressive Episodes by General Practitioners: Comparison of Results From the WHO Collaborative Study on Psychological Problems in General Health Care (1991–1992) and the INSERM Study (1996–1997)[a]
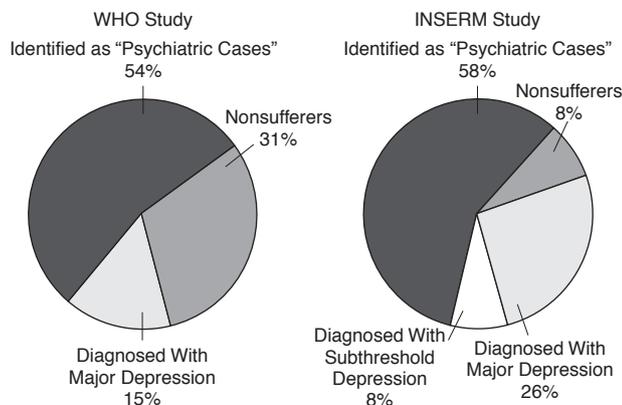
[a]Data from Lecrubier.[10]
Abbreviations: INSERM = Institut National de la Santé et de la Recherche Médicale, WHO = World Health Organization.

Figure 2. Lifetime Prevalence of Mental Disorders in the General Populations of 6 European Countries as Determined by the ESEMeD Study (%)[a]
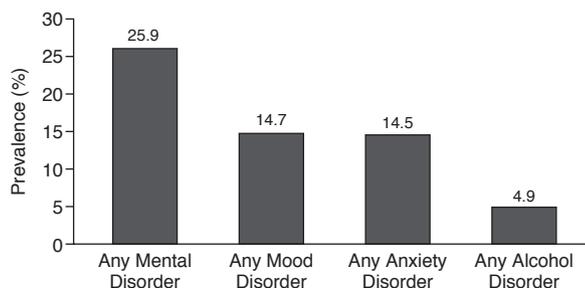
[a]Data from ESEMeD/MHEDEA 2000 investigators.[8,9]
Abbreviation: ESEMeD = European Study of the Epidemiology of Mental Disorders.

Table 1. Proportion of Patients Diagnosed With Mental Disorder Who Received Treatment From Their Primary Care Physician During the WHO Collaborative Study on Psychological Problems in General Health Care, by Center (%)[a]

Center	Any Treatment	Antidepressants	Anxiolytics	Hypnotics
Ankara, Turkey	65	13	23	18
Bangalore, India	52	11	9	24
Ibadan, Nigeria	57	4	20	24
Manchester, UK	37	22	3	5
Nagasaki, Japan	47	32	25	7
Paris, France	61	11	23	12
Rio de Janeiro, Brazil	49	12	13	12
Seattle, Wash	39	28	2	1

[a]Data from Lecrubier and Ustun.[6]
Abbreviation: WHO = World Health Organization.

Table 2. Treatment Prescribed to Patients With Depression or GAD (or both) Diagnosed Using the CIDI During the INSERM Study (%)[a]

Treatment	Depression	GAD	Both
Any treatment	51	54	57
Antidepressant	21	15	31
Anxiolytic	11	15	8
Hypnotic	7	9	9
Tonics and vitamins	4	3	5

[a]Data from Lecrubier and Weiller.[2]
Abbreviations: CIDI = Composite International Diagnostic Interview, GAD = generalized anxiety disorder, INSERM = Institut National de la Santé et de la Recherche Médicale.

dents reported a lifetime history of any mood disorder, 14.5% any anxiety disorder, and 4.9% any alcohol disorder (Figure 2).[8,9]

PRESCRIBING PATTERNS

The WHO study was conducted in 14 different countries with diverse population sizes, ethnicity, cultural attitudes, languages, socioeconomic development, and health care systems. It was not unexpected, therefore, that the proportions of patients who received treatment from their GP differed, ranging from 37% in Manchester in the United Kingdom to 65% in Ankara in Turkey.[11,12] There were also large differences between countries in the kinds of treatments that GPs administered (Table 1). For example, in Paris, 11% of patients whom GPs had recog-

nized as "cases" of mental disorder were prescribed antidepressants, and 23% were prescribed anxiolytics; this compared with 22% prescribed antidepressants and 3% prescribed anxiolytics in Manchester.[6]

The proportions of patients with pure depression and pure GAD who were prescribed an antidepressant during the INSERM study were similar to the findings of the WHO study (21% and 15%, respectively) (Table 2), although prescription rates for anxiolytics were slightly higher than in the INSERM study.[2]

The ESEMeD study also revealed an undertreatment problem.[13] Only 32.6% of those with any 12-month mental disorder reported taking any type of psychotropic drug in the same time period (Table 3). Similarly, only 21.2% of individuals with a 12-month diagnosis of pure depression received any antidepressant, and only 4.6% received antidepressants exclusively. More importantly, 18.4% of patients with a 12-month diagnosis of pure depression received only anxiolytics.

FACTORS INFLUENCING TREATMENT

Recognition

Recognition is a major determinant in the prescription of psychotropic drugs for mental illness. When treatment

Table 3. Twelve-Month Psychotropic Drug Use According to 12-Month Mental Disorders in the ESEMeD Study, N (%)[a]

Disorder	Any Psychotropic Drug[b]	Any Antidepressant Drug	Any Anxiolytic Drug	Any Antipsychotic Drug
No disorder	2150 (10.1)	538 (2.5)	1758 (8.1)	193 (1.0)
Any disorder	703 (32.6)	318 (14.9)	571 (25.5)	76 (3.2)
Any mood disorder[c]	453 (45.6)	234 (24.0)	365 (35.3)	47 (4.8)
Pure major depression	187 (42.7)	92 (21.2)	149 (32.5)	19 (2.8)
Pure mood disorder	259 (41.9)	123 (19.8)	209 (32.7)	27 (3.9)
Any anxiety disorder[d]	433 (32.4)	190 (14.5)	353 (25.3)	48 (3.2)
Pure anxiety disorder	238 (25.5)	80 (8.6)	195 (20.1)	27 (2.1)
Any alcohol disorder[e]	22 (7.6)	9 (3.3)	18 (5.7)	3 (1.4)

[a]Data from ESEMeD/MHEDEA 2000 investigators.[13]
[b]Use of any psychotropic medication during the previous 12 months (antidepressant, anxiolytic, antipsychotic, or mood stabilizer).
[c]Major depressive episode or dysthymia.
[d]Generalized anxiety, social phobia, specific phobia, agoraphobia, or panic.
[e]Alcohol abuse or dependence.
Abbreviation: ESEMeD = European Study of the Epidemiology of Mental Disorders.

Table 4. Proportion of Patients Diagnosed With Mental Disorder Who Received Treatment From Their Primary Care Physician During the WHO Collaborative Study on Psychological Problems in General Health Care, by ICD-10 Diagnosis (%)[a]

Diagnosis	Any Treatment	Antidepressants	Anxiolytics	Hypnotics	Tonics
Depression	56	23	18	12	6
Dysthymia	57	19	20	16	7
GAD	54	18	21	19	5
Agoraphobia	64	32	25	17	2
Panic disorder	67	33	20	13	1
Neurasthenia	55	24	20	10	5
Somatization	54	15	21	9	7

[a]Data from Weiller et al.[12]
Abbreviations: GAD = generalized anxiety disorder, WHO = World Health Organization.

Table 5. Treatment Prescribed and Consumed in Patients With CIDI-Diagnosed Depression Correctly Recognized by Primary Care Physicians During the WHO Collaborative Study on General Psychological Problems in Health Care (%)[a]

Treatment	Identified as Psychiatric Cases		Identified With Depression	
	Prescribed	Consumed	Prescribed	Consumed
Any treatment	55	55	64	56
Antidepressant	24	21	43	33
Anxiolytic	16	21	12	13
Hypnotic	9	13	13	10
Stimulant	5	15	6	14

[a]Reprinted with permission from Lecrubier.[14] Of all patients with CIDI-diagnosed depression, 54% were identified as psychiatric cases, and 15% were identified as having depression.
Abbreviations: CIDI = Composite International Diagnostic Interview, WHO = World Health Organization.

patterns from the WHO study were examined according to ICD-10 diagnoses, the lack of specificity in recognition of mental disorder in primary care was clear (Table 4). Similar prescription patterns were observed for different diagnoses. For example, 23% of patients with depression had been prescribed antidepressants, and 18% had been prescribed anxiolytics; similarly, 18% of patients with GAD had received antidepressants, and 21%, anxiolytics.[12] The results suggest that although primary care physicians could identify "psychiatric cases," they were less able to provide an accurate diagnosis and hence less able to prescribe appropriate treatment.

Even when specific diagnoses were made, treatment patterns in primary care did not always reflect the nature of the condition. In the WHO study, although antidepressants were prescribed more frequently in the 15% of patients who had been recognized as depressed by their GP than in those identified as "psychiatric cases" (43% vs. 24%, respectively), 57% of patients correctly recognized as depressed were not prescribed an antidepressant (Table 5).[14] Furthermore, even when depression was diagnosed correctly and antidepressants were prescribed, nearly one quarter of patients failed to take the medication.[14]

Similar patterns were observed in patients with GAD. In the WHO study, a total of 64% of patients whom primary care physicians recognized as "anxious" were prescribed a psychotropic agent.[11,12] Anxiolytic treatment was more common than antidepressant treatment (31% vs. 14%, respectively); however, when CIDI diagnoses were examined, only 27% of patients meeting criteria for GAD were shown to have received treatment, and the proportions of patients prescribed anxiolytics and antidepressants were similar (9% and 10%, respectively).[11,12]

The ESEMeD study confirmed this with an exclusive use of antidepressants in individuals with a 12-month diagnosis of pure major depression of 4.6%, and this contrasted with the 18.4% of this group who received anxiolytics exclusively.[13] In addition, 32.4% of individuals with a 12-month diagnosis of any anxiety disorder were treated with any psychotropic drug. As in the WHO study, anxiolytic treatment was more common than antidepressants in treating anxiety (25.3% vs. 14.5%, respectively) (Table 3).[13]

Age

Age is an important factor in the diagnosis of mental disorder in primary care. In the WHO study, depression

Table 6. Prevalence of 12-Month Mental Disorders in the ESEMeD Study According to Age (weighted proportions)[a]

Age, y	N	Any Mental Disorder, %[b]	Any Mood Disorder, %[c]	Any Anxiety Disorder, %[d]	Any Alcohol Disorder, %[e]
18–24	664	16.5	6.9	11.9	2.3
25–34	1599	11.3	4.4	7.5	1.4
35–49	2669	12.4	4.2	9.8	0.5
50–64	2197	11.7	4.8	8.7	0.4
65+	1667	7.8	3.5	5.3	0.0

[a]Data from ESEMeD/MHEDEA 2000 investigators.[8,9] Part II sample N = 8796.
[b]Any mental disorder in the table.
[c]Mood disorders were major depression and dysthymia only.
[d]Anxiety disorders were generalized anxiety disorder, social phobia, specific phobia, posttraumatic stress, agoraphobia, and agoraphobia with panic disorder.
[e]Alcohol related disorders were alcohol abuse and alcohol dependence.
Abbreviation: ESEMeD = European Study of the Epidemiology of Mental Disorders.

was recognized less frequently in individuals aged 18 to 24 years (43% of individuals; p < .05) compared with those aged 25 to 44 years (59%) or 45 to 65 years (56%). While age also affected the recognition of GAD, the difference between groups was not significant (36% vs. 50% and 48%, respectively). Primary care physicians are sometimes reluctant to deliver a diagnosis of a chronic mental disorder, such as depression, to younger individuals. Moreover, the anticipation of a logical problem is important in diagnosis, and GPs appear to have a low index of suspicion for mental illness in younger patients.[14]

However, the ESEMeD study, which provides a comprehensive overview of the prevalence of mental disorders in Europe, showed that the highest rates of mental disorders were found in the 18 to 24 years age group (Table 6).[8,9] It is unfortunate that the 18 to 24 years age group, for which a diagnosis of a chronic mental disorder is least likely, is also the group with the highest prevalence of mental disorders.

Willingness to prescribe treatment, particularly antidepressants, followed a similar age-related pattern to willingness to diagnose depression, even after controlling for recognition rate. In the WHO study, treatment was prescribed less frequently in individuals aged 18 to 24 years (31%; p < .05) compared with those aged 25 to 44 years (59%) or 45 to 65 years (59%).[14] Similarly, antidepressants were prescribed significantly less often to younger participants (11%; p < .05) compared with those aged 25 to 44 years (22%) or 45 to 65 years (33%). In the ESEMeD study, the 12-month prevalence of psychotropic drug use was lowest in individuals aged 18 to 24 years (6.6%) and highest in those aged 65+ years (18.8%).

Logistic Regression Analyses

Logistic regression analyses of data from the WHO study have been used to identify factors that significantly affect the prescription of antidepressants and anxiolytics in primary care (Figure 3).[15] Interestingly, factors affecting prescribing (independently of recognition) were similar to

Figure 3. Logistic Regression for Positive and Negative Factors in the Prescription of (A) Antidepressants and (B) Anxiolytics in the WHO Collaborative Study on Psychological Problems in General Health Care[a]

A. Antidepressants

Positive	Negative
Increasing Age Depression/GP Panic Disorder/GP Anxiety and Depression/GP Center 23 Depression/CIDI Comorbidity Spontaneous Psychological Complaints	Somatic Diagnosis Center 18 Age (18–24 y)

B. Anxiolytics

Positive	Negative
GHQ Score Female Gender Increasing Age Spontaneous Psychological Complaints Centers 10, 11, 20, 22, 25	Somatic Disease Center 18
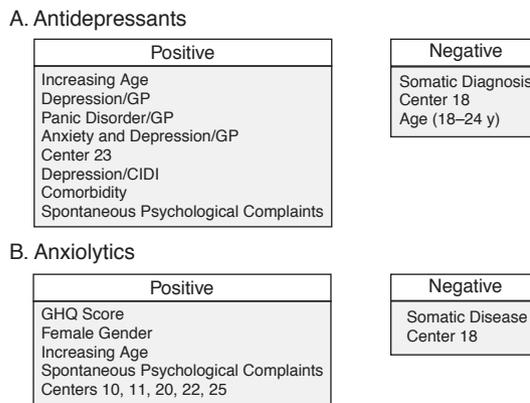
[a]Data from Weiller et al.[15]
Abbreviations: CIDI = Composite International Diagnostic Interview, GHQ = General Health Questionnaire, GP = general practitioner, WHO = World Health Organization.

those that affect recognition. In general, increasing age; a primary care diagnosis of depression, panic disorder, or comorbid anxiety and depression; ICD-10–diagnosed depression; and the existence of comorbidity—probably related more to increased severity than comorbidity itself—increased the likelihood that antidepressants were prescribed. Higher scores on the GHQ, female gender, and increasing age increased the likelihood of an anxiolytic prescription.

The number of spontaneous psychological complaints was an important determinant in recognition of mental disorders and the prescription of both antidepressants and anxiolytics (Figure 3).[15] Indeed, 79% of patients voicing spontaneous psychological complaints were identified as "psychiatric cases" by primary care physicians, compared with only 29% who had no specific complaints. Notably, there was marked transcultural variation in the proportions of patients voicing psychological complaints, ranging from 1% to 5% at sites in China, India, and Japan to 20% to 30% in Western centers in France, Sweden, the Netherlands, and the United Kingdom. Recent educational initiatives and growing public awareness of mental disorders in this region probably explain this pattern. A somatic diagnosis had a negative effect on the prescription of both antidepressants and anxiolytics (Figure 3).

ECONOMIC EFFECTS

Health Care Utilization

Participants whose depression had been recognized in primary care (N = 118) during the 6-month INSERM study utilized health care services to a lesser extent than those whose depression had not been recognized (N = 249). In-

Table 7. Mean Number of Medical Tests in Patients With Pure Depression, Pure GAD, or Both, According to General Practitioner Diagnosis During the INSERM Study[a]

Diagnosis	Recognized as Anxious	Recognized as Depressed	Not Recognized
Pure depression	0.55	0.58	0.63
Pure GAD	0.57	0.49	0.75
Both	0.25	0.30	0.59

[a]Data from Lecrubier and Weiller.[2]
Abbreviations: GAD = generalized anxiety disorder,
   INSERM = Institut National de la Santé et de la Recherche Médicale.

deed, compared with patients with unrecognized depression, fewer patients whose depression had been detected by their GP underwent medical tests (41% vs. 30%; p = .05) or hospitalization (4% vs. 2%; not significant). Fewer patients had also stopped work (18% vs. 14%; p = .006).

In total, 35% of patients with pure depression, 47% of patients with GAD, and 39% with both depression and GAD underwent at least 1 medical test. The mean number of medical tests was lower in patients whose depression or GAD had been recognized (Table 7).

Participants in the ESEMeD study were asked to report how frequently they consulted formal health services due to their emotions or mental health, the type of professional they consulted, and the treatment they received as a result of their consultation in the previous year.[9,16] An average of 6.1% of individuals questioned had consulted a formal health service for their mental health in the previous 12 months. Consultation rates were highest in those with mental disorders (22.2%), and of these 34.1% consulted a GP only, 20.6% consulted a psychiatrist (but not a GP), 10.8% consulted a psychologist or counselor (but not a psychiatrist or GP), and 28.9% consulted both a GP and a mental health professional. Health services usage increased with age up to the 35- to 49-year-old age group; thereafter, the usage rate declined.

The impact of mental health state on functional disability (measured as work loss days [WLDs]) and quality of life was assessed in the ESEMeD study using the self-reporting WHO Disability Assessment Schedule-version 2 and the mental and physical component scores of the 12-item Short Form questionnaire (SF-12), respectively.[17] Mean WLDs increased and quality of life decreased with the number of mental disorders, with the most affected individuals being those with 3 or more 12-month mental disorders. After adjustment for age, gender, and mental and physical comorbidities, pure major depression was one of the mental disorders having the highest impact.

CONCLUSIONS

Psychotropic drugs are among the most commonly used drugs today; nevertheless, the appropriateness of their prescription for mental disorders in primary care varies. The likelihood of receiving appropriate treatment is confound-ed by numerous factors, including the initial recognition of mental disorder, the specific type of disorder that has prompted consultation, the age and gender of the affected individual, the presence of any comorbid disorders (both psychiatric and somatic), and the number of psychological complaints voiced by the patient. Differing cultural attitudes and levels of stigmatization further the transcultural variation.

Both the WHO and INSERM studies described in this article have shown that the use of psychotropic agents in patients with depression and anxiety is often inappropriate. These studies were conducted in the early and late 1990s, respectively; however, the ESEMeD study, which was conducted between 2001 and 2003, shows that a lack of diagnosis and inappropriate treatment of mental disorders remain problems to be addressed.

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