

Research report

Treatment adequacy of anxiety and depressive disorders: Primary versus specialised care in Spain

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Abstract

Background: Literature suggests that a high proportion of the population with mental disorders remains either untreated or poorly treated. This study aimed to describe the adequacy of treatment for Anxiety and Depressive disorders in Spain, how this differs between providers (primary versus specialised care) and which factors are associated with appropriate care.

Method: Data were derived from the Spanish sample ($N=5473$) of the European Study of the Epidemiology of Mental Disorders (ESEMeD), a cross sectional study in a representative sample of adults. The subsample analyzed was composed by the 133 subjects with a mental disorder in the year prior to the interview who received treatment. Treatment adequacy was evaluated in two different ways: (1) considering definitions of minimally adequate treatment evidence based guidelines and criteria used in other epidemiological studies; (2) considering experts rating of treatment appropriateness based on the information contained in the case vignettes created from the CIDI answers. Generalised Estimating Equation (GEE) models and simple logistic regression were conducted to assess the correlates of adequate treatment.

Results: Similar proportions of patients in specialty and general medical treatment received a minimally adequate treatment (31.8% and 30.5%, respectively). Associated factors to appropriateness were living in a large city, having a high educational level, and having a good self rated health state.

Limitations: Treatment adequacy was based on simple information and criteria.

Conclusions: Only one third of the mental health treatment in Spain met minimal adequacy criteria. More research is needed in order to find out reasons for these low rates.

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Keywords: Treatment adequacy; Clinical guidelines; Primary care; Specialized mental health care

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1. Introduction

Despite the development of clinical guidelines by professional bodies, policymakers, and other organisations, evidence suggests that a high proportion of the population with mental disorders remains untreated, or inappropriately treated. In the United States, nearly 58.1% of the persons with a 12-month anxiety disorder and 43.7% of those with depressive disorders have not used any service for the treatment of those disorder (Wang et al., 2005). A similar study carried out in Europe found analogous results (Alonso et al., 2004a). Besides, previous studies, mostly conducted in the USA, have systematically found low rates of guidelines treatment adherence, oscillating between 7.3% and 52%, mainly depending on the type of sample, whether clinical or epidemiological (Kessler et al., 2003, 1997; Oquendo et al., 2002; Roy-Byrne et al., 1999; Wang et al., 2000, 2002; Kniesner et al., 2005; Weillburg et al., 2003; Harman et al., 2005).

Patients with depressive and anxiety disorders may receive care at primary or specialized settings. However, studies on the relationship of type of provider and treatment adequacy are scant. They usually find higher treatment appropriateness in the specialised sector (Kniesner et al., 2005; Wang et al., 2005). Rates of minimally adequate treatment for anxiety disorders in the USA have been found to be 13.6% in the general medical sector and 51.0% in the mental health sector. For major depression, the rates of treatment adequacy for the general medical and the specialised sector oscillated between 14.9% and 52.0%, respectively (Wang et al., 2005). Tiemeier et al. (2002), in the Netherlands, assessed the appropriateness of and variation in the management and treatment of depression, based on the intention-to-treat, by different health professionals. Data showed that 31% of all intention to treat decisions were not consistent with the guidelines. Psychiatrists had the highest rates of adequacy and general practitioners the lowest.

These high rates of inappropriate treatment may have significant health consequences, since they are associated to longer treatment course (Kravitz et al., 2000), an increase in suicidal acts (Oquendo et al., 2002), a decrease in quality of life (Mendlowicz and Stein, 2000) and an increase in societal costs (Lepine, 2002). Previous work has also shown that low education, low-average income and living in urban areas is associated to higher treatment inadequacy (Wang et al., 2005).

As mentioned, most of the studies of treatment adequacy of mental disorders are conducted in countries with a predominance of private insurance health systems, as the USA, and it may be relevant to find out if the same findings apply to countries with other health care sys-

tems. The Spanish Health Care System is publicly financed and provides nearly universal health care free of charge at the point of use. In most of the regions, mental health services are integrated within the general care system.

Finally, the majority of the studies conducted to date are based on epidemiological samples and use rigid adequacy criteria, such as number and duration of treatment sessions. Thus, they fail to take into account either individual clinical characteristics or assessment of overall treatment. More detailed and sophisticated reviews of clinical records are needed to improve the assessment of treatment adequacy.

The present study is conducted as part of the ESEMeD project, an epidemiological study on the prevalence and determinants of mental disorders conducted in six European countries. The aims of this study are to describe the adequacy of treatment for anxiety and depressive disorders in Spain, how it differs between providers (i.e., primary vs. specialised care), and which factors are associated with appropriate care.

2. Material and Methods

2.1. Sample

A detailed description of ESEMeD methods and participants has been provided elsewhere (Alonso et al., 2004b; Haro et al., 2003). Briefly, the ESEMeD-Spain study was a cross-sectional household survey conducted with a sample of individuals representative of the non-institutionalised adult (over 18 years of age) population in Spain. A stratified, multistage, clustered area, probability sample design was used. Participants were interviewed personally in their homes, using computer-assisted personal interview (CAPI) techniques. Data for the project were provided by 5473 Spanish respondents between September 2001 and September 2002. The response rate in Spain was 78.6%, the highest in the six countries.

The project was part of the WHO World Mental Health Survey Initiative (Kessler and Ustun, 2000). The institutional review boards of the participating Spanish institutions (Sant Joan de Déu-SSM and IMIM) approved the research protocol.

2.2. Measures

2.2.1. Psychiatric disorders

Mental health status categories used in the present paper were constructed taking into consideration only a subgroup of common psychiatric disorders, including mood (Major Depressive Episode, Minor Depression,

Dysthymia) and anxiety disorders (Social Phobia, Generalised Anxiety Disorder, Agoraphobia and Panic Disorder). The latest version of the Composite International Diagnostic Interview (CIDI 3.0) was used. The CIDI is a research instrument designed to assess the presence of mental disorders, according to DSM-IV and ICD-10 criteria, using certified lay interviewers (Wittchen, 1994). The World Mental Health (WMH) Survey Consortium (Kessler and Ustun, 2004) developed this updated version of the CIDI. Prevalence estimates of mental disorders were determined by whether respondents' past or current symptoms met the 12-month and/or lifetime diagnostic criteria for a DSM-IV disorder.

Spanish prevalence estimates of mental disorders have been provided elsewhere (Haro et al., 2006).

2.2.2. Utilisation of health services

All respondents were asked to report on their lifetime and last 12 months' use of any service as a result of their 'emotions or mental health problems'. Individuals reporting any use of services were then asked to select whom they visited from a list of formal healthcare providers (psychiatrist, psychologist, specialised nurse, general practitioner, or any other medical doctor) as well as informal providers (social services, religious leaders, or other healers). For each of these providers, respondents were asked about their age at first and most recent contacts, number of visits within the 12 months preceding the interview, whether they were still using the service, and the type of treatment received (psychological, pharmacological or both). In the present paper, we have analysed service use over the previous 12 months, when providers reported were psychiatrists, psychologists, primary care doctors and other medical doctors. The other providers were not included in the analysis, due to the low number of cases. The psychiatrist and psychologist groups were combined into a specialised mental health category, whereas the primary care doctor and the other medical doctor group were combined into the medical care category.

2.2.3. Minimally adequate treatment

Adequate treatment was evaluated in two different ways:

(1) Considering a definition of minimally adequate treatment, based on evidence-based guidelines and the criteria used in other epidemiological studies (NICE, 2004; APA, 1998, 2000; Royal Australian and New Zealand College of Psychiatrists, 2003; GAC, 2002; Wang et al., 2005; Kessler et al., 2003, 1997). Criteria for minimally adequate treatment were: receiving pharmacotherapy for at least 2 months (antidepressant treatment in those cases with a Major Depressive Episode; or antidepressant or

anxiolytic pharmacotherapy in cases with Anxiety Disorders), plus at least 4 visits with a psychiatrist, a general practitioner or any other doctor; or at least 8 psychotherapy sessions with a psychologist or a psychiatrist lasting an average of 30 min.

The minimum of 4 physician visits for adequate treatment was based on the treatment guidelines used, and can be translated into the need for 1 visit for diagnosis and initiation of treatment, and 3 for monitoring and medication changes during the acute and continuation phases of treatment. At least 8 sessions were needed to consider psychotherapy minimally adequate, because clinical trials demonstrating effectiveness of psychotherapy across a range of depressive and anxiety disorders have included at least 8 visits.

(2) In order to have a clinical evaluation of the treatment provided, we created an expert panel that evaluated all individual cases that received treatment for a mental disorder. Expert rating of treatment appropriateness was based on the information contained in the case vignettes created from the CIDI answers. The vignettes were created by two of the investigators translating information contained in the data sets into written information. One vignette was created for each person, with one of the DSM-IV diagnoses that required any service over the past 12 months. It contained information about psychiatric comorbidity, suicidal acts and/or thoughts, screening for psychosis, psychiatric history, use of services over the past twelve months, and psychopharmacological treatment. Table 1 presents 2 vignettes as an example. The vignettes were mailed to a multidisciplinary expert panel who assessed whether treatment was appropriate, inappropriate or equivocal. The expert group was formed by three psychiatrists (JA, JLA, LSC), two psychologists (MAF, AF), two epidemiologists (JA, JMH), one medical practitioner (MC), and one sociologist (MB). Afterwards, the expert group met in person to discuss the treatment appropriateness for each vignette, and tried to reach a consensus. Due to the lack of clinical guidelines for minor depression and dysthymia and the overlap between panic disorder and agoraphobia, these diagnoses were excluded from the analysis of appropriateness.

Expert definition of minimally adequate treatment also incorporated evidence based guidelines, but these criteria were more flexible and incorporated clinical experience. In this way, the main differences between criteria based in other epidemiological studies and expert criteria were:

- The expert panel based their judgment not only on the number of sessions and their duration. It also considered the adequacy of the treatment provider. For example, if a subject reported suicidal thoughts,

Table 1
Examples of case vignettes

Woman, 65 years old
12-months DSM-IV CIDI disorder
Generalised Anxiety Disorder/Major Depressive episode
SERVICE USE RECORD
She had her first session with psychiatrist when she was 40 years old.
She has never been hospitalised for emotional problems.
She has never gone to an emergency room for problems with her emotions or mental health.
SERVICE USE IN THE PAST 12 MONTHS
She had one 15-min session with a psychiatrist. The last session was 1 month ago. She was given a prescription for treatment of emotional problems in the last 1 month. She is still in treatment. She started the treatment in the past 12 months
MEDICATION
Paroxetine 20 mg. In the last month, she took 1 pill everyday during 20 days. During the past 12 months, she took 1 pill every day during 20 days. She said she took the medication based on her doctor's recommendation
 probably adequate
 equivocal
 probably inadequate

Woman, 40 years old
12-months DSM-IV CIDI disorder
Generalised Anxiety Disorder/Social Phobia/Panic Disorder/Premenstrual Dysphoric Disorder/Specific Phobia
Major Depressive episode/Dysthymia
Psychosis screening
Saw a vision that other people could not see/Heard voices that other people could not hear/Conspiracy to harm her
SERVICE USE RECORD
She had her first session with a psychiatrist when she was 38 years old. The last time was more than 12 months ago. She had her first session with a psychologist when she was 38 years old. The last time was more than 12 months ago. She had her first session with a family doctor about problems with her emotions when she was 38 years old. She is still in treatment with him. She had her first session with a nurse or nutritionist about problems with her emotions or mental health when she was 26 years old. The last time was more than 12 months ago. She had her first session with a religious or spiritual advisor about problems with her emotions or mental health when she was 26 years old. The last time was more than 12 months ago. She had her first session with an herbalist, chiropractor or spiritualist about problems with her emotions or mental health when she was 26 years old. The last time was more than 12 months ago.
She was hospitalised for emotional problems when she was 38 years old.
She went to an emergency room for problems with her emotions or mental health when she was 38 years old. In the past 23 months, she has not gone to an emergency room.
SERVICE USE IN THE PAST 12 MONTHS

- She had twelve 20-min sessions with a family doctor. The last session was 7–12 months ago. She was given a prescription for treatment of emotional problems in the last 12 months. She is still in treatment. The family doctor referred her to a mental health specialist but she hasn't gone.
- She had twelve 60-min session with a herbalist, chiropractor or spiritualist about problems with her emotions or mental health. In the past month she had 2 sessions. She is still in treatment. The herbalist, chiropractor or spiritualist did not refer her to a mental health specialist.
- She had four 10-min sessions with a religious or spiritual advisor about problems with her emotions or mental health. In the last month she had 1 session. She is still in treatment. The religious or spiritual advisor did not refer her to a mental health specialist.

MEDICATION
Amityriptiline 75 mg: In the past 12 months, she took 1 pill everyday. She said she took the medication based on her doctor's recommendation.
Halazepan 40 mg: In the past 12 months she took 1 pill everyday. She said she took the medication based on her doctor's recommendation.
Fluoxetine 20 mg: In the past 12 months, she took 1 pill everyday. She said she took the medication based on her doctor's recommendation.
 probably adequate
 equivocal
 probably inadequate

experts rated treatment as adequate only if this person was treated by a specialised professional.

- The expert panel considered adequacy of pharmacological prescription in more detail, taking into consideration the dosage prescribed.
- The expert panel also considered that respondents who began treatment shortly before the interview

could not fulfil the criteria for an adequate treatment even though they may be in the early stage of receiving an adequate treatment. Thus, if a subject reported receiving only one session, and this session was during the month before the interview, the expert rated the treatment as probably adequate assuming that he/she started treatment in this month.

Table 2
Spanish ESEMeD project: sociodemographic characteristics of the participants

	Interviewed participants (unweighted data)		Interviewed participants (weighted data)		Final subsample included in the analysis ^a	
	N	%	N	%	N	%
Total	5473	100.00	5473	100.0	133	100.0
Gender						
Male	2421	44.24	2618.77	47.85	29	21.43
Female	3052	55.76	2854.23	52.15	104	78.57
Age (years)						
18–35	1670	30.51	1963.89	35.88	31	23.31
36–60	2071	37.84	2124.49	38.82	67	50.38
>60	1732	31.65	1384.62	25.30	35	26.32
Marital status						
Married	3645	66.60	3556.80	64.99	76	57.14
Previously married	753	13.76	510.97	9.34	35	26.32
Never married	1075	19.64	1405.24	25.68	22	16.54
Education						
0–12 years	4625	65.87	3443.43	62.97	92	74.11
13 or more years	1867	34.13	2024.82	37.03	41	25.89
Missing data	3	0.00	4.75	0.00	–	–
Employment						
Paid employment	2402	43.89	2335.69	46.33	38	25.23
Not working	3034	55.44	2905.37	53.09	95	74.77
Don't know or refused	37	0.68	31.94	0.58	–	–
Urbanicity						
<100,000	3411	62.32	3322.72	60.71	74	55.64
>100,000	2062	37.68	2150.28	39.29	59	44.36

^a Subjects with a 12 month prevalence of anxiety or depressive disorders who are in treatment or had received treatment in the past twelve months and have complete data to assess treatment adequacy.

2.2.4. Factors associated with treatment appropriateness

The variables analysed in relation to treatment appropriateness were:

Socio-demographic variables: gender; age; completed years of education (categorised as 0–12 and 13+); employment, categorised as paid position (including those working for others or self-employed) and not working (unemployed, temporarily laid off, retired, homemaker, student, maternity leave, illness/sick leave or disabled); and degree of urbanicity, defined as living in a population centre of <100 000 inhabitants, or >100 000 inhabitants.

Self-perceived Health Status: assessed with the EuroQoL-5D Visual Analogue Scale (EuroQoL Group, 1990).

Presence/absence of chronic medical conditions: The existence of chronic medical conditions was assessed by asking respondents whether they have been diagnosed as having any of a list of physical problems: arthritis or rheumatism, back or neck problems, severe headaches, chronic pain, allergies, stroke, heart attack, heart disease, high blood pressure, asthma, tuberculosis, chronic lung

disease, parasitic disease, diabetes, ulcer, thyroid disease, neurological problem, AIDS, and cancer.

Presence/absence of psychiatric comorbidity: defined as having at least one additional mental disorder.

Work Loss Days (WLD): Work Loss Days is an indicator of lost productivity, taken from one of the dimensions of the WHO Disablement Assessment Scale (WHODAS-II). The WLD index measures the proportion of time in a disabled state over the previous month (WHO, 1980), which is calculated using three questions. Q1: 'Beginning yesterday and going back 30 days, how many days out of the past 30 were you totally unable to work or carry out your normal activities because of problems with either your physical health, your mental health, or your use of alcohol or drugs?' Q2: 'How many days out of the past 30 were you able to work and carry out your normal activities, but had to cut down on what you did, or did not get as much done as usual, because of problems with either your physical health, your mental health, or your use of alcohol or drugs?' Q3: 'How many days out of the past 30 did you cut back on the quality of your work or how carefully you worked because of

Table 3
Probability of 12-month service use among those with 12-month disorders

	Only psychiatrist			Only psychologist			Only general practitioner			Any mental health provider+general practitioner			Other medical doctor			Any professional		
	N	%	95% CI	N	%	95% CI	N	%	95% CI	N	%	95% CI	N	%	95% CI	N	%	95% CI
Major Depression Episode	37	30.8	21.0–40.5	8	7.8	1.9–13.8	36	26.4	16.8–36.1	43	31.8	21.8–41.9	4	3.10	0.0–66.6	128	48.9	41.0–56.9
Generalised Anxiety Disorder	10	44.5	18.6–70.5	1	2.6	0–8.0	7	22.5	2.7–42.3	9	24.3	6.0–42.5	2	6.1	0–16.4	29	44.3	25.5–63.0
Panic Disorder	7	37.7	12.1–63.3	3	10.1	0–23.0	5	15.2	1.0–29.4	8	22.4	6.0–39.7	2	14.6	0–34.5	25	49.3	32.0–66.6
Social Phobia	3	19.5	0–48.0	1	5.4	0–18.7	5	65.0	25.5–100.0	1	10.2	0–33.8	–	–	–	10	31.3	8.4–54.1
Any Anxiety Disorder	19	38.4	21.2–55.6	3	3.8	0–8.5	15	28.8	12.5–45.0	16	23.0	10.0–36.1	3	6.0	0–13.8	56	41.8	30.2–53.3
Any Disorder	45	35.0	25.2–44.5	8	7.0	1.6–11.5	40	25.4	16.9–34.9	45	27.8	19.9–37.8	6	3.7	0–6.7	144	40.7	34.1–47.3

Table 4
Percent of patients who received at least minimally adequate treatment, classified by anxiety and/or depressive disorders (weighted data.)

	Psychiatrist			Psychologist			General Practitioner			Other medical Doctor			Specialised Care			General Care			Total		
	N ^a	%	95% CI	N	%	95% CI	N	%	95% CI	N	%	95% CI	N	%	95% CI	N	%	95% CI	N	%	95% CI
Major Depression Episode	70	27.5	(15.0–40.2)	36	10.8	(1.1–20.5)	72	22.5	(9.7–35.5)	10	8.4	(0–24.1)	83	31.0	(19.0–43.1)	75	31.3	(17.5–45.2)	118	35.8	(25.0–46.5)
Generalised Anxiety Disorder	17	46.9	(9.6–84.0)	6	13.3	(0–49.4)	16	14.8	(0–31.9)	3	73.0	(0–100.0)	20	40.1	(5.9–74.3)	17	18.1	(0–36.6)	28	36.2	(8.8–63.6)
Panic Disorder	14	29.6	(2.6–56.7)	8	23.0	(0–61.6)	13	24.8	(0–53.2)	3	16.7	(0–100.0)	18	24.9	(3.3–46.4)	14	25.2	(0–51.6)	24	25.4	(7.0–43.7)
Social Phobia	4	34.3	(0–100.0)	3	23.4	(0–100.0)	6	28.3	(0–86.7)	–	–	–	5	42.6	(0–100.0)	6	28.3	(0–86.7)	10	36.2	(0–79.1)
Any Anxiety Disorder	29	37.1	(11.2–63.0)	14	16.7	(0–37.6)	28	20.9	(0–83.8)	5	25.3	(0–83.3)	35	33.9	(10.8–57.0)	30	21.1	(3.1–39.0)	51	30.7	(13.1–48.3)
Any Disorder	79	33.1	(19.6–46.8)	36	10.8	(1.1–20.5)	78	31.0	(0–32.3)	11	12.8	(0–32.3)	92	31.8	(19.4–44.2)	80	30.5	(17.3–43.7)	133	35.4	(24.8–46.0)

^a Number of cases that have been treated by each professional.

problems with either your physical health, your mental health, or your use of alcohol or drugs?’ The answers are combined as follows to create the work loss days (WLD) index: $WLD = [\text{sum}(1.0*Q1) + (0.5*Q2) + (0.5*Q3)]/30$.

2.3. Statistical analysis

Analysis of interrater agreement between treatment adequacy, as rated by the expert panel, and treatment adequacy, as rated by the evidence-based definition, was calculated using the kappa index.

Basic patterns of service use were examined by computing proportions of those with a depressive and/or anxiety disorder in treatment during the last 12 months before the interview and the proportion meeting criteria for minimal adequate treatment among those with any of these disorders who had contacted services. For persons with comorbid mental disorders (more than one mental disorder diagnosis), we evaluated each disorder independently. For example, one person with a panic disorder diagnosis and a major depressive episode receiving only anxiolytic pharmacotherapy will be rated as receiving an inadequate treatment for depression but adequate for panic disorder. When assessing minimally adequate treatment, if the respondent was receiving adequate treatment in at least one of the disorders, that person was classified as receiving adequate treatment.

Logistic regression analysis was used to assess the correlates of adequate treatment. Since the same individual could have received treatment in the specialised mental health sector and the general health care sector, a generalised estimating equation (GEE) model was used, including two observations for those patients treated in both sectors. GEEs were developed by Zeger and Liang (1986) to extend the generalized linear models to a regression setting with correlated observations within subjects (in this case we may have two observations for each patient in the model – adequacy in the general and specialized care – for each patient). Regression analyses with the GEE methodology is a common choice when the outcome measure of interest is discrete (e.g., binary or count data, possibly from a binomial or Poisson distribution) rather than continuous.

To define a regression model using the GEE methodology, one needs to define the following: (a) the distribution of the dependent variable; (b) the link function, in this case logit, as the dependent variable is binary; (c) the independent variables. We adjusted for sociodemographic variables, health status, presence/absence of chronic medical conditions and presence/absence of psychiatric comorbidity. An additional variable named provider was also included in the model which was set equal to 1 if the setting was specialised mental health and

2 if the setting was general health care. Data from GEE models is interpreted similarly to simple logistic regression.

In the analysis of factors associated to treatment adequacy following experts decision a simple logistic regression model was fitted, since the experts evaluated treatment adequacy regardless the setting the respondent was receiving care.

Data were weighted to adjust for differences in probabilities of selection of respondents within households, differential non-response, and to adjust for residual differences between the sample and the Spanish population.

Statistical analyses were carried out using the Stata Statistical Software 8.0 and SAS™ version 9.1 for Windows, using methods especially designed for analyzing complex sample surveys and weighted data.

3. Results

3.1. Socio-demographic characteristics

Table 2 summarizes the socio-demographic characteristics of the whole sample. The majority of respondents were between 36 and 60 years old, with a mean age of 45.6 years (SD=18.6 years). Nearly 48% were male. The majority were married (65%), had studied between 0 and 12 years (63.0%), and were in paid employment at the time of the interview (46.3%). Finally, nearly half of the participants lived in a population with less than 100 000 inhabitants. Crude and weighed results are presented. As observed, the weighting did not substantially affect the results.

The last column in Table 2 shows the socio-demographic characteristics of the patients included in the analysis of treatment adequacy, who were those individuals with a mental disorder (major depressive disorder, panic disorder, generalized anxiety disorder or/and social phobia) in the 12 months before the interview who also received care in the health sector. The majority were female (78.57%) and were between 36 and 60 years. The self-rated Health Status was between 50 and 100 (72.07%). Most of them had an additional medical chronic condition (76.58%) and 32.1% had more than one psychiatric diagnosis. Finally, mean Work Loss Days was 0.33 (SD=0.47).

3.2. Proportion of 12-month service use

Nearly a 41% of those with at least one diagnosis of depressive or anxiety disorders had used services over the previous 12 months (Table 3). The disorders with the

highest proportion of receiving treatment were major depressive episode (48.9%) and panic disorder (49.3%). The lowest was social phobia (31.3%). The largest part of the treatments took place only in the psychiatric sector (35.0%), followed by a combination of a mental health professional (psychiatrist or psychologist) with a general practitioner (27.8%). More than 25% of the subjects reported treatment exclusively with a GP, and 7.0% with a psychologist.

3.3. Rates of minimally adequate treatment

3.3.1. Rates of treatment appropriateness using the evidence based criteria

Table 4 shows the proportion of minimally adequate treatment by diagnosis, using the evidence based

criteria. A total of 11 patients were not evaluated since they had missing data in at least one of the variables needed to create the treatment adequacy variable. More than one-third of the patients with at least one of the diagnoses considered received, at least, one treatment that could be considered as minimally adequate. The rest failed to meet these minimal standards.

The probability of receiving minimally adequate treatment was similar for the specialised sector and the general medical sector: 31.8% and 30.5%, respectively ($\chi^2=0.05$; $df=1$; $P=0.83$). By diagnosis, we found no significant differences in the probability of receiving minimally adequate treatment (Major Depression Episode vs. Any Anxiety Disorder: 35.8% vs. 30.7%, respectively; $\chi^2=0.28$; $df=1$; $P=0.60$).

Table 5
Factors associated to treatment adequacy among those with anxiety and/or depressive disorders

Factors	Model 1: Evidence based criteria (GEE model)		Model 2: Expert criteria (simple logistic)	
	OR (robust SE)	95% CI	OR (SE)	95% CI
Gender				
Male	1		1	
Female	1.07(0.63)	0.3–3.4	0.80(0.47)	0.3–2.5
Age group				
18–35	1		1	
35–60	2.47(1.47)	0.8–7.9	1.67(1.13)	0.4–6.3
>60	2.21(1.61)	0.6–9.2	2.57(2.00)	0.6–11.8
Urbanicity				
<100,000	1		1	
>100,000	2.97(1.27)	1.3–6.9*	3.56(1.66)	1.4–8.9*
Employment				
Paid employment	1		1	
Not working	2.66(1.45)	0.9–7.7	0.63(0.36)	0.2–1.9
Years of education				
0–12	1		1	
>13	3.36(1.84)	1.1–9.8*	2.31(1.28)	0.8–6.8
Health state				
0–49	1		1	
50–100	3.28 (1.79)	1.1–9.5*	1.88(1.04)	0.3–5.6
Work loss days (–median 0.07)	1.61(0.93)	0.5–5.0	2.30(1.46)	0.7–8.0
Medical comorbidity				
Absence	1		1	
Presence	0.99(0.49)	0.4–2.6	0.57(0.34)	0.2–1.8
Psychiatric comorbidity				
Absence	1		1	
Presence	0.49(0.22)	0.2–1.2	0.50(0.24)	0.2–1.3
Provider			–	–
Specialised care	1		–	–
General care	0.98 (0.37)	0.5–2.0	–	–
(N)	Number of Obs=143			
	Number of groups=109			109
Goodness of fit test (Hosmer-Lemeshow) $\text{prob} > \chi^2$	–			0.42
Area under ROC curve	–			0.72

* $P < 0.05$.

3.3.2. Rates of treatment appropriateness using expert criteria

Analyses revealed that 32.4% of the sample was considered to have received minimally adequate treatment according to the expert panel; 54.4% was rated as probably inadequate; and the rest was rated as equivocal because experts did not reach consensus. The experts did not reach consensus principally because some individuals receiving a large amount of care (a large number of visits) were rated as inappropriately treated by some of the experts and adequately by others, as they met the minimum criteria. In these cases, the conservative approach was to rate them as equivocal. A few other equivocal cases ($N=12$) were so because they had missing data in the medication dose.

The proportion of treatment adequacy, considering all the disorders that a patient had, was similar between experts and adequacy based on the criteria used in other epidemiological studies ($\kappa=0.61$). This agreement is good according to Landis and Koch's (1977) classification of the kappa values.

3.4. Predictors of adequate treatment

Table 5 shows the two different models conducted to determine the contribution of socio-demographic and clinical variables to the probability of receiving minimally adequate treatment.

3.4.1. Model 1: Appropriateness definition based on evidence based guidelines and literature review

Model 1, conducted using GEE methodology, revealed that living in a large city (OR 2.97, 95% CI 1.3–6.8) and having a high educational level (OR 3.36, 95% CI 1.1–9.8) were significantly related to treatment adequacy. Among the clinical variables, only the health status variable (OR 3.28, 95% CI 1.1–9.5) was related to the probability of receiving an adequate treatment. As univariate analyses showed type of provider was not related with appropriateness.

3.4.2. Model 2: Expert panel appropriateness definition

Model 2, which was conducted using the expert panel ratings, showed similar results. Adequate treatment was more likely among those living in a large city (OR 3.56, 95% CI 1.4–8.9). None of the clinical variables were associated with treatment appropriateness. Since the experts evaluated global treatment adequacy regardless of where the patient was receiving treatment, we did not include the provider variable in the model.

4. Discussion

4.1. Mental health service use and treatment appropriateness

Our results reveal critical problems in the treatment of anxiety and depressive disorders in Spain. Despite almost universal health coverage, available clinical guidelines, and the increasing amount of research in mental health treatment, mental disorders are still being treated in an ineffective way at the population level.

Our findings suggest that only 40% of those suffering a depressive or anxiety disorder sought treatment due to their mental health problems. If we consider prevalence as a proxy of treatment need, 60% of those meeting criteria for an anxiety or depressive disorder in the last 12 months showed an unmet need for treatment. Unmet need for mental health care has been studied in different countries and in different disorders, for example USA (Wang et al., 2005; Jalongo et al., 2004; Kessler et al., 2003), Canada (Parikh et al., 1999; Lin and Parikh, 1999); Australia (Andrews et al., 2001), Brasil (Avrichir and Elkis, 2002), United Kingdom (Jenkins et al., 1997), Northern Ireland (McConnell et al., 2002), country comparisons (Demeytenaere et al., 2004) and the review of Lasalvia et al. (2000). Published results systematically report high levels of unmet need for mental health care ranging between 40% and 70%, depending on the disorder which is evaluated. Due to the fact that our data are derived from an epidemiological survey, our results are mostly comparable with those reported by Wang et al. (2005) from the National Comorbidity Survey (replication), since both studies follow similar methodology. For example, while they found that people suffering anxiety disorders presented a 12-month prevalence of 41.9% of service use, we found a 41.8%. For depression, Wang et al. reported 56.3% of treatment, while we found 42.6%. However, it should be noted that Wang included professionals such as religious or spiritual advisor, social worker, etc., which have not been included in our analysis.

However, seeking treatment is not the same as receiving an adequate treatment. Only one-third of the mental health treatments in Spain, for the conditions considered in this analysis, met minimal adequacy criteria. These data are consistent with the results of other international studies, which systematically report serious deficiencies in the quality of mental health care (Wang et al., 2005, 2002, 2000; Kessler et al., 2003; Oquendo et al., 2002).

The two methods considered in this study for describing the adequacy of treatment for anxiety and depressive disorders in Spain (expert panel and

epidemiological criteria) showed similar results. Kappa value was 0.61, which may be interpreted as good (Landis and Koch, 1977). Although agreement between the two methods is good, we think that, when estimating the proportion of persons receiving adequate treatment, the expert criteria may be more accurate than the definition used in epidemiological studies.

Our data did not reveal significant differences between specialised and general medical sectors regarding minimal adequacy treatment rates. This finding was not anticipated, since previous studies have detected differences between different providers (Wang et al., 2005; Kessler et al., 2003; Teimeier et al., 2002; Kniesner et al., 2005). Although more analyses may be required to explain these results, we hypothesize that the organisation of the health services in Spain could explain this striking result: psychiatrists in Spain, when treating patients with anxiety and depressive disorders, usually only see the patients once or twice and then refer them to a GP.

It is also surprising the low rates of treatment adequacy of psychologists, which is around 11%. The low percentage may be due to psychologists needing a minimum of eight 30-min sessions to provide adequate treatment. Again, it is possible that organizational factors may explain this result: psychologist in state owned settings have limited capacity to visit the patients often enough.

4.2. Factors associated with treatment adequacy

The models conducted to determine the contribution of sociodemographics and clinical variables to appropriateness provided interesting results. It is important to note that living in a large city was found to be associated with an increased odds of receiving an adequate treatment, both in the expert group model and in the epidemiological evidence-based model. This could be explained by the higher amount health services and general hospitals available in cities. Our data do not confirm the results reported by Wang et al. (2005) for the US, finding higher rates of adequate treatment by the specialised sector in rural areas. One possible explanation is that in the US, rural areas have higher access to such services. If it is confirmed that the probability of receiving appropriate treatment is related to geographical area, this would suppose a serious equity problem in health services delivery.

The higher proportion of adequate treatment observed in those with a higher educational level could be another finding related to inequity in mental health. The positive association between education and having more possibilities of receiving minimally adequate treatment could also reflect different attitudes that providers have toward patients. On the other hand, it is possible that

patients with a high educational level were more active, had a better knowledge of their rights, and were more compliant (Mechanic, *in press*).

The association of treatment adequacy and health status is surprising and worrying. Individuals who had a lower self-rated health status also tended to have a lower level of treatment adequacy. This may be an indication that our health services are not providing sufficiently intensive care to those who perceive themselves as sicker. This has already been reported in other studies (Wang et al., 2005). However, another explanation could also be feasible: maybe those receiving minimally adequate treatment had a better self-rated health status because the adequate treatment improved their perception of their health status. Since our results are cross-sectional we cannot be certain of the direction of the causality.

We did not find an association between the presence of chronic medical conditions and treatment adequacy. A recent study by Harman et al. (2005) reported that some chronic medical conditions as hypertension or diabetes mellitus are associated to increased odds of receiving adequate treatment for depression, while other medical conditions as heart disease or arthritis are not. As we considered medical chronic conditions in general without taking into account each single medical chronic condition, our method may not be accurate enough. The effect of chronic medical conditions on treatment adequacy could be double: on one hand, the medical conditions could increase the probability of receiving adequate treatment because more contacts with medical providers would result in a better assessment of the mental symptoms. But also, medical chronic conditions could decrease the probability of receiving adequate treatment because physicians could be focused on the physical symptoms. More investigation regarding the effect of chronic medical conditions is needed in order to ascertain their effect on the adequacy of treatment.

4.3. Limitations of this study

We have to acknowledge several limitations when considering our results. First, the ESEMeD project is a cross sectional study, so we cannot conclude that factors associated with adequate treatment are related causally. Second, the final sample considered in this study was small, so our data should be interpreted with caution. Third, in individuals with more than one disorder, we are not certain for which disorder people are receiving treatment, as treatment was ascertained independently of the disorders. Fourth, it could be possible that we overestimated the proportion of people with unmet treatment

needs, since there was a considerable proportion of subjects who met criteria but were not disabled or did not want to seek help (Andrews, 2000; Bebbington, 2000; Kessler, 2000). Indeed, this is an important limitation of the present study. We did not determine need for treatment based on the severity of the disorder; we based our analyses in prevalence. Fifth, it is important to note that some of the respondents who were classified as being inadequately treated using the epidemiological criteria could be in early stages of treatment and thus could not have had time to experience the minimum number of visits. Nevertheless, expert ratings did take into account this possibility, which may have solved this limitation in their assessment. Finally, it is also possible that we underestimated inadequacy, due to the loose adequacy treatment criteria considered in this study. Moreover, it should be noted that we considered inadequacy as a lack of treatment, not taking into account those inappropriate treatments due to over-utilisation of resources.

5. Conclusion

To our knowledge, this is the first approximation to treatment appropriateness carried out in Spain. Reasons for the low rates of adequacy are unclear and may be a combination of organizational and professional aspects. Non-implementation of evidence-based treatments can be originated either by providers' attitudes or by educational, financial or organisational barriers (Mechanic, *in press*; Freeman and Sweeney, 2001). An effort is needed to find out why providers fail to implement evidence based guidelines in order to improve adherence with the recommendations.

Knowledge on treatment adequacy of depressive and anxiety disorders is far from complete. Future surveys will need to use a more rigorous record of treatment processes, especially psychotherapy, as effectiveness strongly depends on the psychological treatment provided (APA, 2000; NICE, 2004).

The objective of health professionals is to reduce the burden of disease. In the case of depressive and anxiety disorders, we have shown that, in addition to increasing and promoting access to health services for people with these conditions, we should also improve the treatment that it is provided to those receiving help.

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