ORIGINAL

INCIDENCE AND VARIABILITY OF TEMPORARY DISABILITY DUE TO ANXIETY DISORDERS DURING 2009 IN THE VALENCIA COMMUNITY, SPAIN

Joaquín Andani Cervera (1), Natividad Guadalajara Olmeda (2), Isabel Barrachina Martinez (2) and David Vivas Consuelo (2).

(1) Hospital Universitario y Politécnico La Fe. Valencia. Spain.

(2) Research Centre for Health Economics and Management. Department of Economics and Social Sciences. Universitat Politècnica de València. Valencia. Spain

ABSTRACT

Background: Anxiety, dissociative and somatoform disorders (WHO-Code 300) are the second cause of Temporary Disability (TD) in Spain. This is the main reason that justifies the analysis of the variability among primary health care centers (PHC) of the Valencian Community in the prescription processes of Temporary Disability for these disorders.

Methods: Epidemiological cross-sectional descriptive study of variability of TD processes initiated in 2009 corresponding to diagnosis Code 300 in 739 PHC from 23 health districts in the Valencian Community, where 25,859 TD processes for the diagnosis Code 300 were prescribed. Traditional indicators of variation developed for the analysis of small areas were used to determine variability in the incidence rate of TD processes. The analysis of variance was used to determine the percentage of explanation of the factors studied.

Results: The average incidence rate obtained was of 1.08 for 100 individuals. The variation range was between 0.01 and 1.97 for percentiles P_5 to P_{95}. In the variance components analysis, the factor of health district explains the highest percentage of variability (22.12), followed by the factor province (20.21%), coastal areas (4.65%), teaching accreditation (2.44%) and the size of population assigned to each PHC (2.40%).

Conclusions: Significant differences were observed in the incidence rate of TD processes for the diagnosis Code 300. The PHCs with greater population pressure and those that are accredited had the highest rates of incidence.

Key words: Sick Leave. Mental Disorders. Primary Health Care. Disability Insurance. Medical Practice Management.

Correspondence
David Vivas
Centro de Investigación en Economía y Gestión de la Salud
Facultad de Administración y Dirección de Empresas. Edificio 7J.
Universitat Politècnica de València
Camino de Vera s/n
46022 Valencia
Spain

RESUMEN

Incidencia y variabilidad de la incapacidad temporal por trastornos de ansiedad en la Comunidad Valenciana durante 2009

Fundamentos: Los trastornos de ansiedad, disociativos y somatomorfos (Code300) constituyen la segunda causa de incapacidad temporal (IT) en España. Esta razón justifica que el presente trabajo se centre en analizar la variabilidad en la prescripción de procesos de IT por estas patologías en los centros de salud y consultorios (CS) de la Comunidad Valenciana (CV).

Métodos: Se realizó un estudio epidemiológico poblacional transversal de variabilidad de los procesos de IT iniciados en 2009 correspondientes al Code300 en los 739 CS, de los 23 departamentos de salud de la CV, donde se prescribieron un total de 25.859 procesos de IT por Code300. Se utilizaron los estadísticos de variabilidad habituales en el análisis de áreas pequeñas para determinar la variabilidad observada en la tasa de incidencia (TI) de los procesos de IT. El análisis de la varianza se utilizó para determinar el porcentaje de explicación de cada factor estudiado.

Resultados: La TI media por 100 individuos es de 1,08 con un rango de variación de 0,01 a 1,97 entre los percentiles P_5 a P_{95}. En el análisis de componentes de la varianza, el factor departamento de salud es el que explica mayor porcentaje de variabilidad (22,12%) seguido del factor provincia (20,21%), litoralidad (4,65%), acreditación para la docencia (2,44%) y tamaño poblacional asignado al CS (2,40%).

Conclusiones: Se observa una variabilidad notable en las TI de las prescripciones de IT por Code300. Los factores departamento y provincia son los que más explican esta variabilidad. Los CS con mayor presión poblacional y los acreditados tienen mayores tasas de incidencia.

Palabras clave: Ausencia por enfermedad. Trastornos mentales. Atención Primaria de Salud. Seguro por enfermedad. Administración de la Práctica médica.

INTRODUCTION

Temporal Disability (TD) benefits are financed by the National Institute for Social Security (INSS) in collaboration with Mutual Insurance companies. The budget of the Social Security (SS) for TD benefits for normal incidents for 2011 was around €7,000m.[1] As in the case of other developed countries, the importance in social, economic and health terms is enormous.[2]

The Spanish Social Security System (SS) defines the responsibilities of the National Health System (NHS) regarding the control of sick leave and empowers the INSS to establish collaboration agreements with regional health services in the Autonomous Communities.[3] Since 2010, INSS doctors can approve sick leave for their patients.

TD prescriptions are made by the doctors in the Primary Health Centres (PHC).[4-9] A study[10] proposes that details of TD be included in the health information system procedures. Another[11] recognizes the necessity of standardizing TD management criteria in Disability Assessment Medical Units, in order to reduce the variability or standardize sick-leave criteria. Starting from the hypothesis that the assignment of sick leave is another medical prescription, its variability can therefore be analyzed with statistical tools.

Variability in clinical practice is defined as the difference between the health services offered and used[12,13], according to doctors and geographical area. The variability in TD prescription could be explained by patient characteristics (age, socio-economic characteristics, ethnic group and gender), whether the worker is freelance or an employee, by individual doctors (specialty, age, gender, training and experience), by the managing system (Mutual or INSS) or by the centre attended (public or private, rural or urban, with accreditation for teaching and size), among other factors.[14,15] This variabi-

lity has also been studied in relation to surgical operations,[16] pharmaceutical consumption[17] and clinical services used.[18]

Mental illnesses are among the causes that generate the longest-lasting [5,19-22] TDs, recurrence[6] and permanent disability[7]. In worldwide studies on the burden of disease, unipolar depression appears in fourth position.[8] According to the WHO projection for 2020, this ailment will compose 15% of all illnesses and will be the second major cause of morbidity after ischemic hearth disease.[9] Currently, 20-25% of patients attended in PHCs have symptoms related to mental disorders.[23-25]

Mental illnesses are included in Group 5 of the 19 groups of International Classification of Diseases (ICD 9-MC, 2010) with Diagnostic Codes 290 to 319. Anxiety, dissociative and somatoform disorders (WHO-Code 300) are the second most frequent cause of TD in Spain.[26]

The objective of this work is to analyse the incidence of TD in the prescription processes for Code 300 in the Valencian Community (VC) during 2009, including variability and the PHC-related factor, according to the data available.

MATERIAL AND MÉTHODS

Design. Epidemiological cross-sectional descriptive study of the variability of TD processes by Code 300 in PHC in the VC.

Population and setting: The units analyzed were 739 PHCs (257 health centers and 482 auxiliary health centres) in 23 health districts of the VC. Of these, 1 to 3 are in the province of Castellon, 13 and 15 to 22 are in Alicante, and the remainder in Valencia. A total of 480,755 TD processes were prescribed for all diagnoses in these centres, of which 25,859 corresponded to Code 300 and were thus analyzed.

PHC services are provided by both health professionals (general practitioners, pediatricians, nurses and health auxiliaries) and non-heath professionals (administration workers and porters). 10 PHCs in the VC also use the services of other professionals (clinical psychologists and dentists).

Data Sources. TD process data was obtained from the Outpatients Information System (OIS) of the ABUCASIS electronic health record system of the Conselleria de Sanidad de la Generalitat Valenciana (Autonomous Health Department). The OIS includes several management modules, one of which is for the TD process.

The Population Information System (PIS) of the Valencia Health Agency provided demographic information that had been used in previous studies. [17]

Measurement of results. The TD health management indicator is the Incidence Ratio (IR) of PHC:

$$IR = (NP/PR) \times 100$$

Where:

NP: number of patients prescribed as TD during 2009.

PR: population at risk or population registered with the SS on 1st January 2009, considered to be constant throughout the year, i.e. between 16 and 65 years of age, employed or unemployed-but-contributing, eligible to be prescribed sick leave. This gave a total reference population of 2,304,598 persons.

The direct method of standardization by age and gender was used to carry out comparisons between PHCs (total population from CV). All centres were considered to have the same distribution as the reference population (RP). Indirect standardization was used to compare each PHC with the RP according to the strata defined in table 1.

Statistical analysis: For the inter-PHC comparison we used the variability statistics for small-area analysis[17,18,27,28] as follows: 1) Variation ratio between areas in percentile 5 (P_5) and percentile 95 (P_{95}) (attendance in the area in P95 divided by the area in P_5, RV_{5-95}) 2) Variation ratio RV_{25-75}, 3) Variation coefficient (standard deviation divided by the mean, calculated without the areas below P_5 or above P_{95}) (CV_{5-95}), 4) Variation coefficient adjusted for the number of cases in each area (CVW_{5-95}). This coefficient is adjusted for the population size of each PHC, which is considered better than the variation coefficient for different PHC population sizes. 5) Systematic variation component (SCV_{5-95}), the greater the SCV the greater the systematic variability not due to random factors.[28]

The Standardised Incidence Ratio (SIR) was calculated to compare each PHC with the RP as the ratio between the observed and expected events. The number of expected events for each PHC was obtained by multiplying IR by VC for each stratum and by each stratum population in the PHC. A study was made of those PHCs with a SIR 50% above or below the SIR for the entire RP, which was given the value of 1.

The percentage variability due to different factors is obtained from an analysis of the variance components; these include: health department, province, distance from the coast, population assigned to the PHC, and accreditation for teaching specialist techniques. The figure showing Fisher's Least Significant Difference (LSD) intervals provides a means of visualizing and interpreting significant differences between the different factors considered.

RESULTS

Mental disorders were the cause of 30,496 (7.53%) of all TD processes registered in the VC during 2009. Code300 was involved in 26,069 (63.68%) of the cases

Table 1
Distribution of the Valencia Community working population into strata
(by age group and gender) and IR

Women (1,182,705)		Working population	Men (1,212,893)	
TI	**%**	**Age groups**	**%**	**TI**
0,649128	14.97%	16-24	14.91%	0.27584
1.558598	25.02%	25-34	25.76%	0.8511
1.575544	24.75%	35-44	25.89%	0.958521
1.476487	20.69%	45-54	20.22%	0.950091
1.099822	14.57%	55-64	13.22%	0.922607

Table 2 *
Statistical analysis of variability in Temporary Incapacity processes by Code300
in Health Centers

Raw data	Cases (TI cases opened) *	25,859
	Mean IR *	1.0794
IR standardized by the direct method	Minimum IR *	0
	Maximum IR *	10.214
	$Percentile_5$ *	0.01
	$Percentile_{25}$ *	0.28
	$Percentile_{50}$ *	0.796
	$Percentile_{75}$ *	1.233
	$Percentile_{95}$ *	1.951
Variability Statistics	Variation rate$_{5-95}$ **	195.052
	Variation rate $_{25-75}$ ***	4.4
	Coefficient of Variation $_{5-95}$ **	0.45
	Weighted Coefficient of Variation$_{5-95}$ **	0.323
	Systematic Coefficient of Variation *	0.157
	Systematic Coefficient of Variation $_{5-95}$ **	0.056
IR standardized the indirect method	PHCs with IR < 50% of total population*	72 (9.74%)
	PHCs with IR > 50% of total population *	115 (15.56%)
	PHCs with IR <> 50% of total population *	187 (25.30)

* In 739 PHCs. ** In PHCs in percentiles 5 and 95, *** In PHCs in percentiles 25-75.

diagnosed as being due to mental disorders, 5.38% of total diagnosed cases, and were also responsible for 3,965,902 (14.98%) of all working days lost, after diseases of the osteomuscular system (29.83%).

The IR by Code300 is always higher in women (1.31) than men (0.82), with the greatest differences seen in the 25-34 year interval and the smallest in the 55-64 group. The age group with the highest IR in both sexes is the 35-44 year-old group (table 1).

For every 100 individuals included in the PR of the 739 PHCs, an average of 1.0794 IR processes were prescribed by Code300 (table 2).

The values of the standardized rates, excluding 10% of the PHCs with extreme values (5% on either side), indicate that the variation ranges from 0.01 in P_5 to 1.951 in P_{95}, which means that the PR of

the PHC in P_{95} received 195 times more TD processes by Code300 than the PHC in P5 (RV_{5-95}= 195.052). Similarly, the PR of the PHC in P_{75} received 4.4 times more TD processes than the PHC in P_{25} (RV_{25-75}= 4.400), which gives an idea of the (variability in 50% of accumulated IR). V_{5-95} had a value of 0.450, CVW_{5-95} was 0.323, and CSV for the set of standardized rates and for those included in percentiles 5-95 (CSV_{5-95}) was 0.157 and 0.056, respectively.

There were 72 (9.74%) PHCs with standardized IR more than 50% lower than that of the total population of the VC (IR=1.0794), or in other words, with a SIR below 0.5, while there were 115 (15.56%) with an SIR 50% higher, most of them situated in the city of Valencia and surrounding districts.

PHCs with a null standardized IR were excluded from the variance components analysis (table 3). Another PHC with a

Table 3
Variance component analysis for IR with the following fixed factors: Health Districts, Province, Distance from the Coast, Teaching Accreditation and Population Size

Source	Sum of Squares	gl	Mean Square	Variance Component	%
Total (corrected)	42.9595	574			
Health District	10.4434	22	0.474699	0.0167328	**22.12**
Residual	32.5161	552	0.058906	0.058906	77.88
Total (corrected)	183.699	574			
Province	23.6082	2	11.8041	0.0709111	20,21
Residual	160.091	572	0.27988	0.27988	79.79
Total (corrected)	42.9595	574			
Distance from Coast	0.970753	1	0.970753	0.00357621	4.65
Residual	41.9887	573	0.0732787	0.0732787	95.35
Total (corrected)	42.9595	574			
Teaching Accreditation	0.505675	1	0.505675	0.00185455	2.44
Residual	42.4538	573	0.0740904	0.0740904	97.56
Total (corrected)	42.9595	574			

Figure 1
LSD graphs of Health District, Province, Distance from Coast, Teaching Accreditation and Population
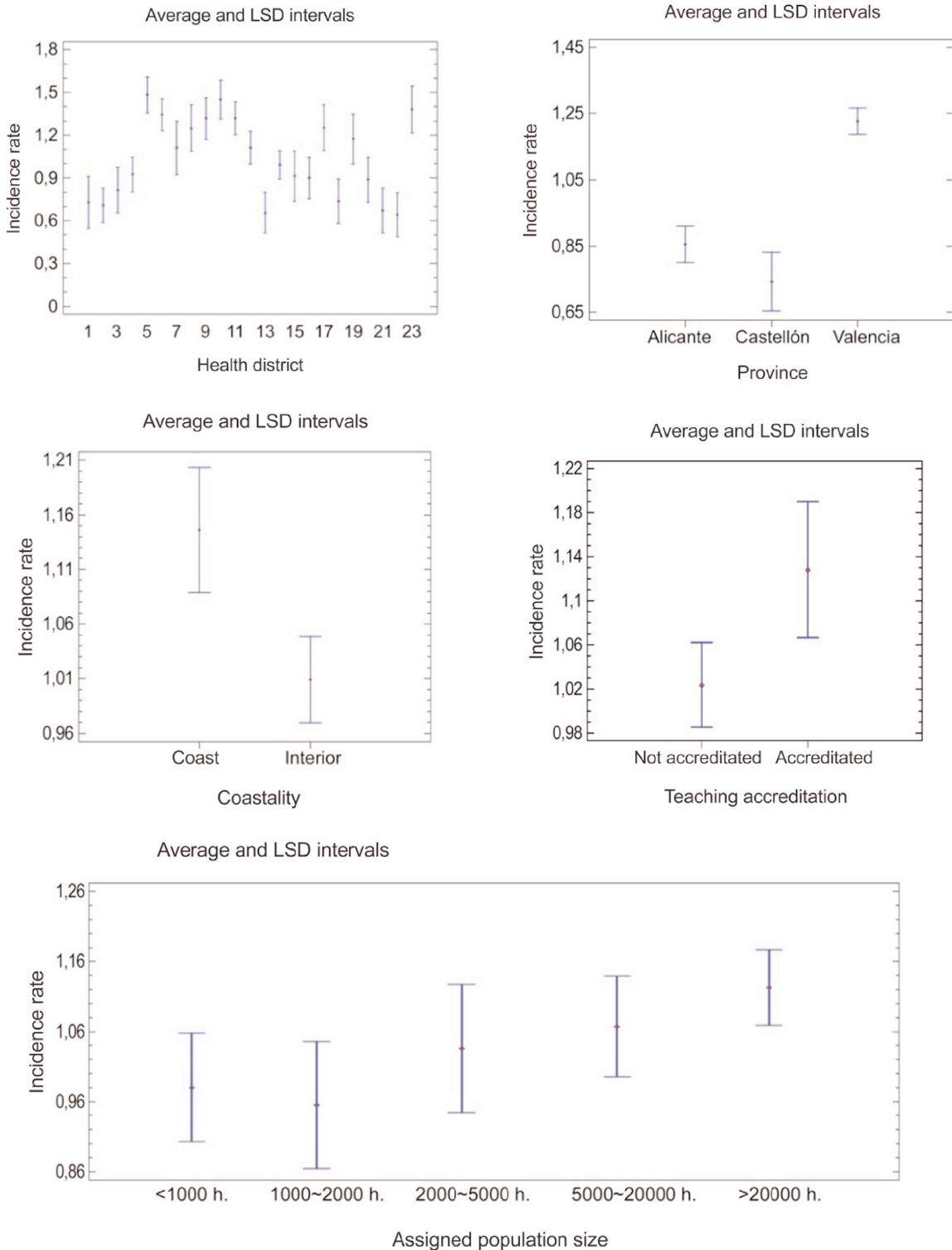
Table 4
Variance component analysis for IR with the following factors:
Province and Health Disctrict

Source	Sum of Squares	Gl	Mean Square	Variance Component	%
Total (corrected)	183.699	574			
Province	23.6082	2	11.8041	0.0666505	19.03
Health District	183.699	20	0.947119	0.0279168	7.97
Error	23.6082	552	0.255704	0.255704	73.00

value of 10 was excluded for being 10 times higher than the next smallest.

The Health District Factor was found to explain the highest percentage of variability (22.12%), followed by Province (20.21%), Distance from the Coast (4.65%), Teaching Accreditation (2.44%) and Size of Population assigned to the PHC (2.40%). The LSD graphs shown in figure 1 give significant differences between the PHCs in Valencia and those in Castellón and Alicante, coastal and interior regions, and between PHCs with and without teaching accreditation, in which the IR is considerably higher. There are also significant differences between PHCs with assigned populations higher than 20,000 and those with fewer than 2,000 patients.

A combined analysis was also carried out for the Province (19.03%) and Health District (nested by province) (7.97%) factors (table 4).

DISCUSSION

The Health District factor had the strongest influence on variability, which is a highly significant result, as it is a key element in health management. The next most influential factor was the Province in which the PHC was located; most of the PHCs with an IR over 50% higher than the average as measured by Code300 were in the province of Valencia, mostly in the capital and its surrounding districts.

The remaining factors (Distance from the Coast, Teaching Accreditation and Assigned Population Size) were also significant, though to a lesser extent, and would be useful when considering improvements in the health management system. The PHCs on the coast were found to have a higher IR than those inland and those with over 20,000 assigned patients had higher IRs than those with less than 2,000. Bearing in mind that the PHCs with the largest number of patients are located in the most densely populated areas (on the coast and in the city of Valencia itself), it can be concluded that higher population densities give rise to higher IRs. The reason for this is still not clear and should be made the subject of future studies. The fact that teaching-accredited PHCs have higher IRs than non-accredited centres could be seen as being due to their medical staff being more familiar with anxiety disorders and thus being more ready to prescribe ID by Code 300. Training could therefore be considered as a variability factor in prescription by professionals, a finding that is in agreement with the conclusions of other studies[10], although its low significance advises a certain degree of caution

in this respect. In no case can it be said that variability was due to inappropriate action by professionals or by defective medical procedures.

The results on the incidence of mental disorders and their relationship with ID (7.53% of the initiated ID processes and 14.98% of working days lost through illness) agree with those of previous studies.[5-7,19-22]

The gender factor was seen to have a strong influence. Women were found to be more prone to be off work due to ID, as other studies have found,[7,15,21,22] although still others have reached the opposite conclusion,[5,6,19-21] since this difference depends on a variety of circumstances, including the reason for the incapacity.[19] Age is also the cause of different TDs, which is lower in the lowest and highest age groups, as was seen in previous studies.[19-21] These results confirm the need to isolate the effects of gender and age by standardizing the population in order to be able to make comparisons between different PHCs and between PHCs and the RP, as has been done in other studies.[14,17,18]

Comparing the results with other variability studies in other areas of health care, TD prescription processes according to Code300 in the VC can be considered to be highly variable and of considerable importance in the health management system. For example, hip fractures[16] were defined as a low variability process with a RV_{5-95} at 2.39, RV_{25-75} at 1.49, CV_{5-95} at 0.22 and CSV_{5-95} at 0.04. The consumption of antihypertensives[17] was also found to have high variability, with $RV_{5-95} = 1.35-3.99$, $RV_{25-75} = 1.24-1.54$, $CV_{5-95} = 0.13-0.31$ and $CSV_{5-95} = 0.02-0.07$. Variability in the use of hospital emergency services[18] was found to be remarkably high, with $RV_{5-95} = 2.49-3.66$, $RV_{25-75} = 1.37-1.59$ and $CV_{5-95} = 0.32-0.43$.

The results show that standard-practice guides should be used in diagnosing mental disorders in clinical practice and that any possible barriers[29] to their use should be eliminated. This would improve the attention given to patients, reduce the variability in diagnosis and guarantee equality of criteria in granting patients sick leave for TD.

The ID processes of patients who were members of mutual insurance organizations (MUFACE, MUGEJU and ISFAS) (2.73% of the RP) were not included in the study, as the sick-leave, confirmation and discharge forms for these patients do not conform to the official NHS models. Neither was the variability studied due to individual patient characteristics, apart from age and gender, as the PHCs were made the unit of analysis.

The principal limitation of the study is the fact that no information was available on repeated ID episodes in the same patient. Also, the OIS provided by ABUCASIS contained information on all ID processes by Code300, but not on all patients with this diagnosis. It was therefore impossible to compare the differences between patients with ID processes and the rest by means of the Minimum Data Set (MDS).

In conclusion, in spite if the above limitations, this work confirms the existence of variations in conceding sick leave and discharging ID patients and also identifies some of the causes, although further research will be necessary to describe in greater detail the variations in prescribing leave of absence for ID in this and other disorders. This work has opened a line of research that involves other variables and approaches.

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BIBLIOGRAFÍA

1. Seguridad Social. Estadísticas e informes [citado 11 de mayo 2011]. Disponible en: http://www.seg-social.es/ Internet_1/Estadistica/Est/Presupuesto_aprobado/Gastos/index.htm

2. Roelen CAM, Koopmans PC, Anema JR, et al. Recurrence of medically certified sickness absence according to diagnosis: A sickness absence register study. J Occup Rehabil. 2010; 20:113-21.

3. Andani J. Variabilidad en la práctica médica de prescripción de procesos de Incapacidad Temporal, por código diagnóstico 300 de la CIE, en la Comunidad Valenciana [Tesis doctoral]. Valencia: Universitat Politècnica de València; 2010.

4. Castejón J, Benavides FG, Gimeno D, et al. Calidad del diagnóstico médico en la certificación de la Incapacidad Temporal por enfermedad común. Aten Primaria. 2006; 37:142-7.

5. Koopmans PC, Roelen CAM, Bültmann U, et al. Gender and age differences in the recurrence of sickness due to common mental disorders: a longitudinal estudy.BMC Public Health. 2010; 10:426.

6. Aurrekoetxea Agirre JJ, Sanzo Ollakarizketa JM, Zubero Oleagoitia E, et al. Repetición de procesos de incapacidad temporal según diagnóstico. Aten Primaria. 2009; 41:439–45.

7. López Cuenca S, Albaladejo Vicente R, Villanueva Orbáiz R, et al. Análisis de la Incapacidad Temporal en trabajadores de la rama sanitaria de un área de salud. Aten Primaria. 2006; 38:550-4.

8. Ayuso Mateos JL. Depresión: Una prioridad en salud pública. Med Clin (Barc). 2004; 123:181-6.

9. Murray CJL, López AD. Alternative projections of mortality and disability by cause, 1990-2200: Global Burden of Disease Study. Lancet. 1997; 349:1498-504.

10. Benavides FG. Utilidad sanitaria de la Incapacidad Temporal. Aten Primaria. 2005; 36:388-9.

11. Álvarez Theurer E, Vaquero Abellán M. Mejora de la calidad de una unidad médica de valoración de incapacidad laboral. Med Segur Trab. 2007; 3: 21-34.

12. McPherson K. Cómo debería modificarse la política sanitaria ante la evidencia de variaciones en la práctica médica. Variaciones en la Práctica Médica. 1995; 7:9-17.

13. Marión Buen J, Peiró S, Márquez Calderón S, et al. Variaciones en la práctica médica: importancia, causas e implicaciones. Med Clin (Barc).1998; 110:382-90.

14. Molinos Castro S, González Martínez R, Cimas JE, et al. Variabilidad de la práctica médica ante una sinusitis en función del consumo de recursos. Aten Primaria. 2000; 26:23-37.

15. Benavides FG, Torá I, Martínez JM, et al. Evaluación de la gestión de los casos de incapacidad temporal por contingencia común de más de 15 días en Cataluña. Gac Sanit. 2010; 24:215-19.

16. Ruiz Jareño L. Variaciones geográficas en la cirugía de la patología degenerativa de raquis en el Sistema Nacional de Salud [tesis doctoral]. Valencia: Universitat de València; 2009.

17. Sanfélix-Gimeno G, Peiró S, Librero J. Variabilidad en la utilización de antihipertensivos entre las zonas básicas de salud de la Comunidad Valenciana. Gac Sanit. 2010; 24:397-403.

18. Peiró S, Librero J, Ridao M, et al. Variabilidad en la utilización de los servicios de urgencias hospitalarios del Sistema Nacional de Salud. Gac Sanit. 2010; 24:6-12.

19. García-Díaz AM, Pértega-Díaz S, Pita-Fernández S, et al. Incapacidad Temporal: características en un centro de salud durante el período 2000-2002. Aten Primaria. 2006; 37:22-9.

20. González-Barcala FJ, Cadarso-Suárez C, Valdés-Cuadrado L, et al. Determinantes de la duración de la Incapacidad Temporal y la vuelta al trabajo en un área sanitaria de Galicia. Aten Primaria. 2006; 37:431-8.

21. Álvarez Theurer E, Llergo Muñoz A, Vaquero Abellán M. Análisis de la duración de los periodos de incapacidad temporal por procesos en Andalucía. Factores asociados. Aten Primaria. 2009;41:387-93.

22. Roelen CAM, Koopmans PC, Hoedeman R, et al. Trends in the incidence of sickness absence due to common mental disorders between 2001 and 2007 in the Netherlands. Eur J Public Health. 2009; 19:625-630

23. Ansseau M, Dierick M, Buntinkx F, et al. High prevalence of mental disorders in primary care. J Affect Disord. 2004; 78:49-55.

24. López-Bastida J, Serrano-Aguilar P, Duque-González B. Costes socioeconómicos de las enfermedades mentales en las islas Canarias en 2002. Aten Primaria. 2004; 34:32-8.

25. Sicras Mainar A, Rejas Gutierrez J, Navarro Artieda R, et al. Costes y patrón de uso de servicios en pacientes que demandan atención por problemas mentales en asistencia primaria. Gac Sanit. 2007; 21:306-13.

26. Instituto Nacional de la Seguridad Social [sede web]. Madrid: Ministerio de Trabajo y Inmigración. [acceso 14 de junio de 2010]. Estadísticas e Informes. Incapacidad Temporal. Ejercicio 2009. Disponible en: http://www.seg-social.es/Internet_1/Estadistica/Est/Otras_Prestaciones_de_la_Seguridad_Social/Incapacidad_Temporal/Ejercicio_2009/index.htm

27. Librero J, Rivas F, Peiró S, et al. Metodología del Atlas de variaciones en cirugía ortopédica y traumatología en el Sistema Nacional de Salud. Atlas Var Pract Med Sist Nac Salud. 2005; 1: 43-48.

28. Ibáñez B, Librero J, Bernal-Delgado E, et al. Is there much variation in variation? Revisiting statistics of small area variation in health services research. BMC Health Services Research. 2009; 9:60. Disponible en: http://www.biomedcentral.com/1472-6963/9/60.

29. Cabana MD, Rand CS, Powe NR, et al. Why don't physicians follow clinical practice guidelines? JAMA. 1999; 15: 1458-1467.