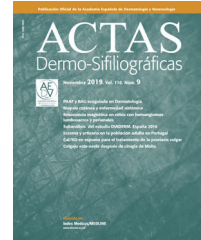




# ACTAS Dermo-Sifiliográficas

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## ORIGINAL ARTICLE

# [Translated article] Analysis of Undergraduate Dermatology Syllabi at Spanish Universities: Does the Weight of Theoretical Content Match the Skin Conditions Seen in Primary Care and General Dermatology Practices?

A. Martín-Gorgojo<sup>a,\*</sup>, I. García-Doval<sup>b,c</sup>, A. Buendía-Eisman<sup>d</sup>, E. Nagore<sup>e</sup>

<sup>a</sup> Sección Especialidades Médicas, Servicio ITS/Dermatología, Organismo Autónomo Madrid Salud, Ayuntamiento de Madrid, Madrid, Spain

<sup>b</sup> Unidad de Investigación, Fundación Piel Sana AEDV, Madrid, Spain

<sup>c</sup> Servicio de Dermatología, Complejo Hospitalario Universitario de Vigo, Vigo, Pontevedra, Spain

<sup>d</sup> Facultad de Medicina, Universidad de Granada, Granada, Spain

<sup>e</sup> Departamento de Dermatología, Universidad Católica de Valencia San Vicente Mártir. Servicio de Dermatología, Fundación Instituto Valenciano de Oncología, Facultad de Medicina, Universidad Católica de Valencia San Vicente Mártir, Valencia, Spain

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### KEYWORDS

Family medicine;  
Dermatology;  
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Undergraduate  
medical education

### Abstract

**Introduction:** Undergraduate dermatology courses vary in the nearly 50 Spanish medical faculties that teach the subject. This study aimed to describe the characteristics of these courses and to analyze whether the weight assigned to dermatology topics reflects the caseloads of primary care physicians and general dermatologists in the Spanish national health system.

**Material and methods:** Cross-sectional study of syllabi used in Spanish medical faculties during the 2021–2022 academic year. We determined the number of teaching hours in public and private university curricula and compared the weight of dermatology topics covered to the dermatology caseloads of primary care physicians and general dermatologists as reported in published studies.

**Results:** Most medical faculties taught dermatology for one semester. The median number of credits offered was 4.5. On average, lectures covered 24 theoretical topics, and seminars and workshops covered 9 topics. We identified a clear disparity between the percentage of time devoted to dermatology topics in course lectures and the skin conditions usually managed in primary care and general dermatology practices.

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\* Corresponding author.

E-mail address: [alejandromartingorgojo@aedv.es](mailto:alejandromartingorgojo@aedv.es) (A. Martín-Gorgojo).

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*Discussion:* The skin diseases most commonly treated by primary care physicians and general dermatologists are underrepresented in the curricula of Spanish medical faculties. The topics that should be given more weight in syllabi, or recovered for inclusion in dermatology courses, should be re-examined. Our findings show that the topics that ideally should be emphasized more are types of dermatitis, infectious skin diseases, acne, psoriasis, rashes, and the differential diagnosis of benign and malignant neoplasms. There should be additional support for the theoretical teaching of these topics.

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## PALABRAS CLAVE

Medicina de Familia;  
Dermatología;  
Epidemiología;  
Educación médica;  
Educación médica de  
pregrado

## Análisis de las características de la docencia de pregrado de Dermatología en las universidades españolas. ¿Los contenidos teóricos se aproximan a la casuística de los médicos de Atención Primaria y dermatólogos generales?

### Resumen

*Introducción:* La docencia de pregrado de Dermatología varía entre las casi 50 facultades de Medicina españolas. El presente estudio pretende describir las características de las asignaturas y analizar si la carga lectiva de los temarios se ajusta a la casuística de los médicos de Atención Primaria y dermatólogos generales del sistema de salud español.

*Material y método:* Estudio de corte transversal realizado en 2021-2022. Se recabaron datos de universidades a partir de las guías docentes. Se comparó la carga docente de una universidad pública y otra privada con la carga asistencial de médicos de familia y dermatólogos a partir de estudios previos.

*Resultados:* La mayor parte de las facultades imparten Dermatología como asignatura semestral, con una mediana de 4,5 créditos, con una media de 24 temas teóricos y 9 temas en seminarios y talleres. Existe una clara divergencia entre la carga docente relativa de los temas teóricos y la carga asistencial por enfermedades cutáneas en Atención Primaria y Dermatología general.

*Discusión:* La carga lectiva infrarrepresenta en gran medida las enfermedades cutáneas más comúnmente consultadas en Atención Primaria y Dermatología general. Resulta oportuno reevaluar qué contenidos deben adquirir o recuperar una mayor representación en la carga docente de la asignatura de Dermatología. Con base en los resultados obtenidos, consideramos óptimo incrementar, idealmente mediante metodologías de apoyo a la docencia teórica, la carga docente referida a cuadros de dermatitis, dermatosis infecciosas, acné, psoriasis, urticaria y, finalmente, las neoplasias benignas y su diagnóstico diferencial con las malignas.

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## Introduction

Medical–surgical dermatology and venereology (MSDV) is a specialty that is generating growing interest among medical students, and this interest grows even further once students become more aware of the role of the dermatologist.<sup>1</sup> Data from the postgraduate specialization period highlight that, in recent years, the places offered for medical residents in MSDV are systematically chosen by the candidates with the highest grades in the Spanish medical board exam (“examen MIR”). However, most Spanish medical school graduates choose other specialties, with family and community medicine being the most numerous (2338 places of 7989 offered to medical residents [29.3%] went to this specialty).<sup>2</sup>

The caseload generated by dermatologic conditions in primary care is substantial,<sup>3,4</sup> and a high percentage of affected patients are referred from this care level to

dermatology.<sup>5</sup> Therefore, undergraduate training of future family physicians in diseases affecting the skin, mucosa, and adnexa must be as robust as possible.

The areas covered in the different subjects that make up a degree in medicine are constantly updated to include the latest available scientific evidence. However, the content and workload of the syllabi are generally stable, mainly because the material provided in manuals and texts aims to ensure coherence of content. Teaching materials often underrepresent some diseases, which, for various reasons, receive scant attention in scientific publications and events but are characterized by high incidence, prevalence, and/or disease burden.

Thus, a significant proportion of MSDV specialists and, in particular, family and community medical doctors see patients with very common skin conditions (typical dermatologic conditions in primary care or direct access without

triage) on a daily basis. Undergraduate courses either do not cover these conditions or do so in too little detail.

In the present article, our aims were to describe the characteristics of undergraduate dermatology courses in medical schools throughout Spain, to analyze whether the subjects covered and their relative number of teaching hours reflect the caseloads of general dermatologists and family physicians in Spain, and to propose improvements.

## Material and Methods

In order to meet our goals, we designed a cross-sectional study based on data collected during the academic year 2021–2022 on teaching in the specialty of MSDV in Spain. We included data that were publicly available in the syllabus on the web pages of the departments that incorporate the specialty of MSDV in the various schools of medicine. We also included the cut-off grades and cost of registration for first-year undergraduate studies (from the various university websites and from a cut-off grade reference website,<sup>6</sup> if the former did not contain all the necessary data). In cases where it was impossible to obtain the syllabus or this was incomplete, we contacted the teaching coordinators responsible for the subject of dermatology.

In order to compare data on relative weight by disease in the syllabus, we selected the public center of the third author (ABE) and the private center of the last author (EN) of the present manuscript as a reference. In both cases, the syllabi were similar to those of the other schools of medicine. Once the theoretical areas of the syllabus were ordered, we attributed a percent weighting of relative and approximate time dedicated to each of the areas addressed, with half of the percentage calculated assigned when it was necessary to account for a very specific disease area. For example, when accounting for the number of teaching hours dedicated to herpes simplex, we assigned half of that of the corresponding subject area, namely, viral infections. We used specific articles as reference studies for the cases seen in daily clinical practice. For specialists in family and community medicine, we used 2 articles (one describing the most frequent diagnoses of skin disease in primary care<sup>4</sup> and another analyzing the most frequent referrals from primary care to the specialty of dermatology<sup>5</sup>); for specialists in MSDV, we used that of DIADERM, sponsored by the Healthy Skin Foundation of the AEDV.<sup>7</sup>

## Results

A medical degree can be studied at 37 public universities and 10 private universities in Spain. The medical schools of some of the public universities require a registration fee and access grades and vary in terms of their characteristics and location (in the same and different provinces). Table 1 shows basic information for the universities.

The maximum cut-off grade to enter medical schools in Spain during the academic year 2021–2022 was 13.5. While the lowest published grade (11.99) was for a private center, most private centers did not publish the grade necessary for undergraduate medical studies. Also noteworthy is the variation in the cost of registration for the first

year of medicine, both in public centers (depending on the autonomous community, with a minimum of €757 in Andalusia and a maximum of €1660 in Catalonia) and in private centers (ranging from €11 990 to 20 920).

Table 2 shows the different denominations of the subject in which the course content for MSDV is provided, as well as the quantitative and qualitative aspects of the syllabus. Most medical schools teach the subject during the second cycle of the degree, in year 4 (21 schools) and year 5 (19 schools). The subject mostly covers 6 months and stands alone (i.e., it is not shared with other, similar knowledge areas). The median number of credits (European Credit Transfer and Accumulation System) is 4.5, that is, 125 official teaching hours (including both active class time and self-study). Students cover a mean of 24 theory areas, with 9 areas covered in seminars and workshops. In general terms, practical classes are the main approach (i.e., a mean of 11 hours of seminars and workshops complemented by 20 hours of clinical practice sessions), as opposed to the theory classes (mean, 28 hours). Finally, in line with the information provided in the syllabus, the number of hours of self-study and tutorials (mean, 55 hours) are almost the same as that of theory, seminars/workshops, and clinical practice sessions (mean, 65 hours).

Fig. 1 shows the caseload (as a percentage of the total number of diagnoses) for diseases reported in primary care and the dermatology department from various series.<sup>4,5,7</sup> It also shows, in part, the structure of the Spanish health system, where acute conditions, such as herpes and mycosis, are more commonly seen in primary care (or by general dermatologists who see patients without triage); other lesions are managed mainly in specialized care. Acne, dermatophytosis, and dermatitis were the most frequently diagnosed skin diseases in primary care (corresponding to 41.5% of diagnoses based on reported data<sup>4</sup>), whereas benign and malignant neoplasms and skin abnormalities (including actinic keratosis) are more common in dermatology (37.3% of diagnoses in DIADERM<sup>7</sup>).

Fig. 2 shows the difference between the frequency of diseases (caseload) and the relative teaching time for the theory areas. Only in the case of acne and malignant neoplasms in the 2 universities studied did teaching time reflect the caseload in the clinical practice of general dermatologists in Spain, in contrast with family physicians.

## Discussion

In the present study, we address the quantitative and qualitative characteristics of undergraduate subjects aimed at MSDV in Spain. Our comparison of the theory syllabus and the relative teaching workload for specific diagnoses with data from previous studies on the caseload of dermatologists and primary care physicians showed that the teaching workload only approaches that of general dermatologists for 2 diagnoses.

Therefore, according to the data presented, diagnoses of dermatological diseases by Spanish dermatologists and primary care physicians are underrepresented in the theory taught in subjects aimed at MSDV in Spain.

**Table 1** Spanish Universities With Schools of Medicine: Entry Grade, Location, Cost of Registration, and Webpage.

Ranking in 2020 (based on the entry grade)	Ranking in 2021	Name	Province or autonomous community	Entry grade in 2020	Entry grade in 2021	Cost of first-year registration (€) in 2021, except where otherwise indicated	Web
<i>Public centers</i>							
1	4	Autonomous University of Madrid	Madrid	13.426	13.463	1568	<a href="http://www.uam.es/ss/satellite/medicina/es/home.htm">http://www.uam.es/ss/satellite/medicina/es/home.htm</a>
2	3	University of València	Valencia	13.416	13.475	1200	<a href="http://www.uv.es/mediodont">http://www.uv.es/mediodont</a>
3	1	Complutense University of Madrid	Madrid	13.408	13.5	1568	<a href="https://medicina.ucm.es/">https://medicina.ucm.es/</a>
4	5	Miguel Hernández University of Elche	Alicante	13.309	13.419	1200	<a href="http://medicina.umh.es/">http://medicina.umh.es/</a>
5	7	University of Alcalá	Madrid	13.288	13.357	1568	<a href="http://medicinaycienciasdelasalud.uah.es/">http://medicinaycienciasdelasalud.uah.es/</a>
6	10	University of Granada	Granada	13.27	13.319	757	<a href="http://www.ugr.es/~facmed/">http://www.ugr.es/~facmed/</a>
7	6	Jaume I University	Castellón	13.258	13.376	1200	<a href="https://www.uji.es/departaments/med/">https://www.uji.es/departaments/med/</a>
8	8	Rey Juan Carlos University	Madrid	13.257	13.35	1568	<a href="https://gestion2.urjc.es/pdi/departamento/Y173">https://gestion2.urjc.es/pdi/departamento/Y173</a>
9	9	University of Sevilla	Sevilla	13.256	13.345	757	<a href="https://www.departamento.us.es/dmedicina/index.php/es/">https://www.departamento.us.es/dmedicina/index.php/es/</a>
10	19	University of Extremadura	Badajoz	13.224	13.1	1111	<a href="http://medicina.centros.unex.es/">http://medicina.centros.unex.es/</a>

Table 1 (Continued)

Ranking in 2020 (based on the entry grade)	Ranking in 2021	Name	Province or autonomous community	Entry grade in 2020	Entry grade in 2021	Cost of first-year registration (€) in 2021, except where otherwise indicated	Web
11	11	University of Málaga	Málaga	13.186	13.275	757	<a href="https://www.uma.es/departamentos/info/72964/departamento-de-medicina-y-dermatologia/">https://www.uma.es/departamentos/info/72964/departamento-de-medicina-y-dermatologia/</a>
12	2	University of Murcia	Murcia	13.152	13.492	1007	<a href="https://www.um.es/web/derma/">https://www.um.es/web/derma/</a>
13	23	University of Barcelona Clínic Campus	Barcelona	13.135	13.022	1660	<a href="http://www.ub.edu/medicina">http://www.ub.edu/medicina</a>
14	16	Center of Defense University of Madrid	Madrid	13.135	13.216	0	<a href="http://cud.uah.es/">http://cud.uah.es/</a>
15	13	University of Córdoba	Córdoba	13.122	13.25	757	<a href="http://www.uco.es/organiza/departamentos/med-der-ori/">http://www.uco.es/organiza/departamentos/med-der-ori/</a>
16	37	University of Cádiz	Cádiz	13.09	12.232	757	<a href="https://medicina.uca.es/">https://medicina.uca.es/</a>
17	32	Pompeu Fabra University	Barcelona	13.042	12.758	1660	<a href="http://www.upf.edu/biomed/">http://www.upf.edu/biomed/</a>
18	12	University of Castilla La Mancha-Ciudad Real	Ciudad Real	13.014	13.26	1132	<a href="http://www.uclm.es/cr/medicina/">http://www.uclm.es/cr/medicina/</a>
19	22	University of La Laguna	Santa Cruz de Tenerife	12.992	13.029	875	<a href="https://www.ull.es/departamentos/medicina-interna-dermatologia-y-psiquiatria/">https://www.ull.es/departamentos/medicina-interna-dermatologia-y-psiquiatria/</a>
20	14	University of Castilla La Mancha-Albacete	Albacete	12.991	13.245	1132	<a href="http://www.med-ab.uclm.es/">http://www.med-ab.uclm.es/</a>

Table 1 (Continued)

Ranking in 2020 (based on the entry grade)	Ranking in 2021	Name	Province or autonomous community	Entry grade in 2020	Entry grade in 2021	Cost of first-year registration (€) in 2021, except where otherwise indicated	Web
21	28	University of Barcelona Bellvitge Campus	Barcelona	13.135	12.878	1660	<a href="http://www.ub.edu/medicina">http://www.ub.edu/medicina</a>
22	25	University of Las Palmas de Gran Canaria	Las Palmas de Gran Canaria	12.951	12.962	875	<a href="https://www.ulpgc.es/departamentos/dcmq">https://www.ulpgc.es/departamentos/dcmq</a>
23	21	Public University of Navarra	Navarra	12.949	13.086	1350	<a href="http://www.unavarra.es/fac-cienciasdelasalud">http://www.unavarra.es/fac-cienciasdelasalud</a>
24	15	University of Oviedo	Asturias	12.915	13.23	975.12	<a href="https://medicinaysalud.uniovi.es">https://medicinaysalud.uniovi.es</a>
25	17	University of Salamanca	Salamanca	12.911	13.175	1376	<a href="http://www.usal.es/webusal/node/28">http://www.usal.es/webusal/node/28</a>
26	30	University of the Basque Country (Spanish language)	Vizcaya	12.823	12.827	1225	<a href="http://www.medikuntza-odontologia.ehu.es/">http://www.medikuntza-odontologia.ehu.es/</a>
27	29	University of Illes Balears	Balearic Islands	12.8	12.842	1249	<a href="https://www.uib.es/es/lauib/Govern-i-organi-tzacio/estructura/facultats-i-escoles/fmed/">https://www.uib.es/es/lauib/Govern-i-organi-tzacio/estructura/facultats-i-escoles/fmed/</a>
28	36	Rovira i Virgili University	Tarragona	12.791	12.708	1660	<a href="http://www.fmcs.urv.cat/">http://www.fmcs.urv.cat/</a>
29	26	University of Santiago de Compostela	A Coruña	12.75	12.925	836	<a href="https://www.usc.es/es/centros/medodo/">https://www.usc.es/es/centros/medodo/</a>
30	20	University of Zaragoza	Zaragoza	12.735	13.096	1278	<a href="https://medicina.unizar.es/">https://medicina.unizar.es/</a>

Table 1 (Continued)

Ranking in 2020 (based on the entry grade)	Ranking in 2021	Name	Province or autonomous community	Entry grade in 2020	Entry grade in 2021	Cost of first-year registration (€) in 2021, except where otherwise indicated	Web
31	18	University of Valladolid	Valladolid	12.729	13.121	1376	<a href="http://www.med.uva.es/">http://www.med.uva.es/</a>
32	27	University of Cantabria	Cantabria	12.727	12.902	954	<a href="http://web.unican.es/centros/medicina">http://web.unican.es/centros/medicina</a>
33	24	University of Zaragoza-Huesca	Huesca	12.719	13.015	1278	<a href="https://fccsyd.unizar.es/">https://fccsyd.unizar.es/</a>
34	33	Autonomous University of Barcelona	Barcelona	12.718	12.751	1660	<a href="http://www.uab.cat/medicina">http://www.uab.cat/medicina</a>
35	35	University of Lleida	Lleida	12.68	12.711	1660	<a href="http://www.medicina.udl.cat/">http://www.medicina.udl.cat/</a>
36	34	University of Girona	Girona	12.672	12.717	1660	<a href="https://www.udg.edu/es/fm">https://www.udg.edu/es/fm</a>
37	31	University of the Basque Country (Basque language)	Vizcaya	12.629	12.82	1225	<a href="http://www.medikuntza-odontologia.ehu.es/">http://www.medikuntza-odontologia.ehu.es/</a>
<i>Private centers</i>							
38	38	University of Vic-Central University of Catalonia	Barcelona	12.194	11.987	13 790	<a href="https://www.umedicina.cat/es">https://www.umedicina.cat/es</a>
39	39	Catholic University of Murcia	Murcia	(Specific and, in principle, on-site entrance examinations are required, as is a personality test)		11 990 (12 600 in 2022–2023) The price of the Cartagena campus, which opened in 2021–2022, does not seem to vary	<a href="http://www.ucam.edu/">http://www.ucam.edu/</a>

Table 1 (Continued)

Ranking in 2020 (based on the entry grade)	Ranking in 2021	Name	Province or autonomous community	Entry grade in 2020	Entry grade in 2021	Cost of first-year registration (€) in 2021, except where otherwise indicated	Web
39	39	Catholic University of Valencia San Vicente Mártir	Valencia	12.8 in both 2020 and 2021 (An in-person entrance examination is required. This evaluates secondary level grades, performance, and psychosocial skills, followed by a personal interview)		13 450	<a href="http://www.ucv.es/">http://www.ucv.es/</a>
39	39	International University of Catalonia	Barcelona	(In-person entrance examination required)		15 360 (in 2022–2023)	<a href="http://www.uic.es/es/salud">http://www.uic.es/es/salud</a>
39	39	University of Navarra	Navarra	(Minimum grade of 7 in secondary education [upper cycle] and specific on-site entrance exam)		16 000	<a href="http://www.unav.es/facultad/medicina/">http://www.unav.es/facultad/medicina/</a>
39	39	CEU University Cardenal Herrera	Valencia	(Access test that takes into account the grade in secondary education [upper cycle] must be requested)		17 740 (in 2022–2023: 18 420 in Valencia, 15 280 in Castellón)	<a href="https://www.uchceu.es/">https://www.uchceu.es/</a>



Table 1 (Continued)

Ranking in 2020 (based on the entry grade)	Ranking in 2021	Name	Province or autonomous community	Entry grade in 2020	Entry grade in 2021	Cost of first-year registration (€) in 2021, except where otherwise indicated	Web
39	39	Francisco de Vitoria University	Madrid	(Access test, available online, takes into account grades from secondary education [lower cycle], secondary education [upper cycle, first year] and first and second terms of secondary education [upper cycle, second year], English level, and aptitude test)		17 900	<a href="https://www.ufv.es/centro/facultad-de-ciencias-de-la-salud/">https://www.ufv.es/centro/ facultad-de-ciencias-de-la-salud/</a>
39	39	Alfonso X el Sabio University	Madrid	(Access test, available online, takes into account grades from secondary education [upper cycle, first year], competency test, English test, and aptitude test)		20 457	<a href="http://www.uax.es/">http://www.uax.es/</a>
39	39	European University of Madrid	Madrid	(Online test required)		20 920	<a href="https://universidadeuropea.com/grado-medicina-madrid/">https://universidadeuropea.com/grado- medicina-madrid/</a>
39	39	CEU University San Pablo	Madrid	(Access test, available online, takes into account grades from secondary education [upper cycle, first year])		20 720	<a href="https://www.uspceu.com/alumnos/facultad-medicina/presentacion">https://www.uspceu.com/alumnos/facultad -medicina/presentacion</a>

**Table 2** Characteristics of Subjects With Specific MSDV Content in Spanish Medical Schools.

Ranking in 2020 (according to the cut-off grade)	Name of the university	Name of the subject	Year when course is given	By term or year	Total ECTS credits for the subject	ECTS credits for dermatology	No. of theory subjects according to syllabus	Hours of theory according to syllabus	No. of subjects in seminars and workshops	Hours of seminars and workshops	Hours of clinical practice	Total teaching hours according to credits (including self-study)	Remarks
<i>Public centers</i>													
1	Autonomous University of Madrid	Dermatology	Fifth	Annually	5	5	31	31	7	7	30	125	
2	University of València	Dermatology	Fourth	First term	4.5	4.5	17	19	5	24	13	112.5	
3	Complutense University of Madrid	Dermatology	Fifth	First term	6	6	30					150	
4	Miguel Hernández University of Elche	Dermatology	Third	First term	4.5	4.5	26		4			112.5	
5	University of Alcalá	Dermatology	Fourth	Second term	4.5	4.5	16	16	11	11.25	33.75	112.5	
6	University of Granada	Dermatology	Fourth	Second term	6	6	40	40		10.5	10	150	
7	Jaume I University	Diseases of the locomotor apparatus, immune system, and skin	Fifth	Second term	8	(No data)	28						

Table 2 (Continued)

Ranking in 2020 (according to the cut-off grade)	Name of the university	Name of the subject	Year when course is given	By term or year	Total ECTS credits for the subject	ECTS credits for dermatology	No. of theory subjects according to syllabus	Hours of theory according to syllabus	No. of subjects in seminars and workshops	Hours of seminars and workshops	Hours of clinical practice	Total teaching hours according to credits (including self-study)	Remarks
8	Rey Juan Carlos University	Dermatology	Fifth	First term	5	5	30	35	8	10		125	Practice sessions not included in the subject (included in 'Clinical Practice II'). The number of hours of clinical practice varies according to the hospital from at least 40 h (80 h at the coordinating center for the subject). This is usually increased by a further 80-h optional rotation in year 6.
9	University of Sevilla	Dermatology	Third	Second term	6	6	30	30	15	14	16	150	In addition, optional year 5 course called 'Advanced Dermatology: Cosmetic Medicine and Sexually Transmitted Diseases', with 30 h of theory and 30 h of seminars
10	University of Extremadura	Dermatology	Fourth	First term	6	6	40	45	0	0	15	90	
11	University of Málaga	Dermatology, immunopathology, and toxicology	Third	Second term	9	4	7	20.25		12	8.25	100	
12	University of Murcia	Dermatology	Fifth	Second term	4.5	4.5	32		40	7	16	112.5	
13	University of Barcelona Clínic Campus	Dermatology	Fifth	First term	5	5	9	25		7	40	125	

Table 2 (Continued)

Ranking in 2020 (according to the cut-off grade)	Name of the university	Name of the subject	Year when course is given	By term or year	Total ECTS credits for the subject	ECTS credits for dermatology	No. of theory subjects according to syllabus	Hours of theory according to syllabus	No. of subjects in seminars and workshops	Hours of seminars and workshops	Hours of clinical practice	Total teaching hours according to credits (including self-study)	Remarks
14	Center of Defense University of Madrid	Dermatology	Fourth	Second term	4.5	4.5	16	16	11	11	46	125	
15	University of Córdoba	MSDV	Fifth	First term	6	6	19	19	6	12	18	150	
16	University of Cádiz	Dermatology	Fourth	Second term	6	6	30	30	5	13	46	150	
17	Pompeu Fabra University	Dermatology	Fourth	Second term	4	4	24	48		8	16	100	
18	University of Castilla La Mancha-Ciudad Real	Dermatology	Fourth	Annually	6	6	24	24	16	26	20	150	
19	University of La Laguna	Dermatology	Fourth	Annually	4.5	4.5	21	21	5	5	17	112.5	
20	University of Castilla La Mancha-Albacete	Dermatology	Fourth	Annually	6	6	4	17		12	33	150	

Table 2 (Continued)

Ranking in 2020 (according to the cut-off grade)	Name of the university	Name of the subject	Year when course is given	By term or year	Total ECTS credits for the subject	ECTS credits for dermatology	No. of theory subjects according to syllabus	Hours of theory according to syllabus	No. of subjects in seminars and workshops	Hours of seminars and workshops	Hours of clinical practice	Total teaching hours according to credits (including self-study)	Remarks
21	University of Barcelona Bellvitge Campus	Dermatology	Fifth	First term	5	5	20	20	4	4	36	125	
22	University of Las Palmas de Gran Canaria	Dermatology, allergology, and clinical immunology	Third	Second term	7.5	4.5 (estimated)	32	32	7	14	14	112.5	
23	Public University of Navarra	Dermatology	Third	Second term	3	3	20	20		8	0	75	
24	University of Oviedo	Dermatology	Fourth	Second term	6	6						150	
25	University of Salamanca	Dermatology	Fifth	First term	4	4	35	39	2	15	2	100	
26	University of País Vasco (Spanish language)	Dermatology	Fourth	First term	6	6	28	28	10	15	16	150	5 different groups (in Álava, Guipúzcoa, and Vizcaya, with variations in the syllabus)
27	University of Illes Balears	Dermatology	Fourth	Second term	3	3	21	20		3	5	75	
28	Rovira i Virgili University	Dermatology	Fourth	Annually	4	4	26	26		10		100	

Table 2 (Continued)

Ranking in 2020 (according to the cut-off grade)	Name of the university	Name of the subject	Year when course is given	By term or year	Total ECTS credits for the subject	ECTS credits for dermatology	No. of theory subjects according to syllabus	Hours of theory according to syllabus	No. of subjects in seminars and workshops	Hours of seminars and workshops	Hours of clinical practice	Total teaching hours according to credits (including self-study)	Remarks
29	University of Santiago de Compostela	Dermatology	Fifth	First term	4	4	30	30	4	4	13	100	
30	University of Zaragoza	Dermatology, immunopathology, and toxicology	Third	Second term	9	4	7	20.25		14.25	6	100	
31	University of Valladolid	Dermatology	Fourth	First term	5	5	25	25	8	12		125	
32	University of Cantabria	MSDV	Fourth	First term	6	6	30	30		10	14	150	
33	University of Zaragoza-Huesca	Dermatology	Third	Second term	9	4	7	20.25		14.25	6	100	
34	Autonomous University of Barcelona	Clinical dermatology	Fifth	Annually	4	4	25		8		10	100	
35	University of Lleida	Dermatology	Fifth	First term	4	4	26	25	16	16		100	
36	University of Girona	Dermatology: (1) Sensory organs: the skin and (2) Plastic surgery	Fifth	Second term	11	6 (estimated)	19	18		8		150	

Table 2 (Continued)

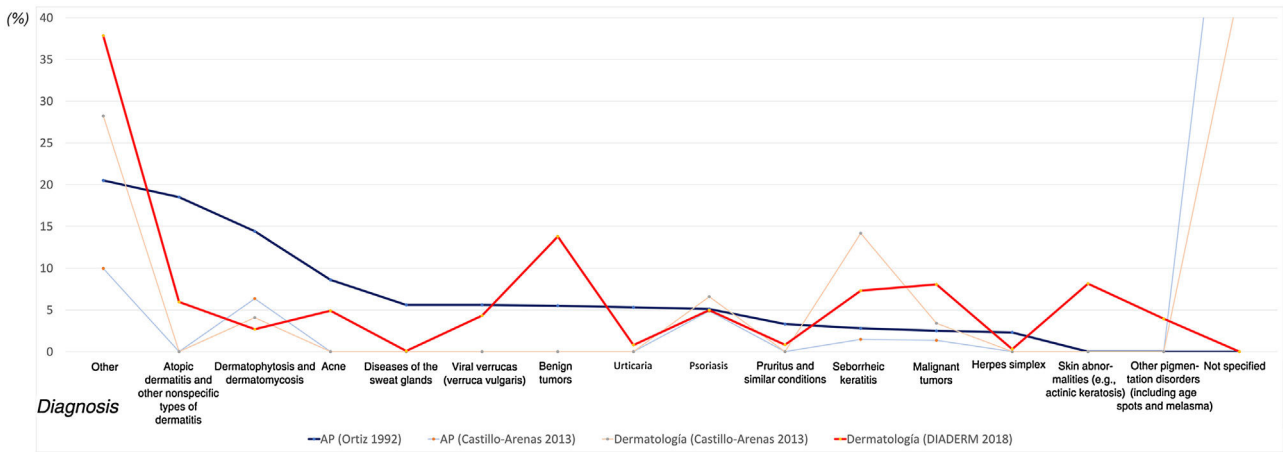
Ranking in 2020 (according to the cut-off grade)	Name of the university	Name of the subject	Year when course is given	By term or year	Total ECTS credits for the subject	ECTS credits for dermatology	No. of theory subjects according to syllabus	Hours of theory according to syllabus	No. of subjects in seminars and workshops	Hours of seminars and workshops	Hours of clinical practice	Total teaching hours according to credits (including self-study)	Remarks
37	University of País Vasco (Basque language)	Dermatology	Fourth	First term	6	6	28	28	10	15	16	150	5 different groups (in Álava, Guipúzcoa, and Vizcaya, with variations in the teaching guidelines)
<i>Private centers</i>													
38	University of Vic-Central University of Catalonia	Sensory organs: the skin	Fifth	Annually	5	5	17						
39	Catholic University of Murcia	Dermatology	Fourth	First term	4.5	4.5	43	26		6	13.5	125	
39	Catholic University of Valencia San Vicente Mártir	Dermatology	Fifth	First term	6	6	25	45		5	17.5	112.5	
39	International University of Catalonia	Dermatology	Fifth	First term	4	4	30	30		14	16	100	Also offers an optional course in Practical Dermatology
39	University of Navarra	Dermatology	Fifth	First term	3	3	27	27		7.5		75	

Table 2 (Continued)

Ranking in 2020 (according to the cut-off grade)	Name of the university	Name of the subject	Year when course is given	By term or year	Total ECTS credits for the subject	ECTS credits for dermatology	No. of theory subjects according to syllabus	Hours of theory according to syllabus	No. of subjects in seminars and workshops	Hours of seminars and workshops	Hours of clinical practice	Total teaching hours according to credits (including self-study)	Remarks
39	CEU Cardenal Herrera University	Diseases of the organs, skin, and senses	Fourth	Second term	9	3.5 (estimated)	27			0	100	According to the syllabus, in-class activity is limited to 100h of theory (same as before COVID-19 pandemic)	
39	Francisco de Vitoria University	Dermatology	Fourth	Second term	3	3	14	25.5		35	75		
39	Alfonso X el Sabio University	Dermatology	Fourth	Second term	6	6	28	28	7	7	30		150
39	European University of Madrid	Clinical training VIII: Dermatology	Fifth	Annually	8	8	30	50		8	100		200

Abbreviations: ECTS, European Credit Transfer and Accumulation System; MSDV, medical–surgical dermatology and venereology.



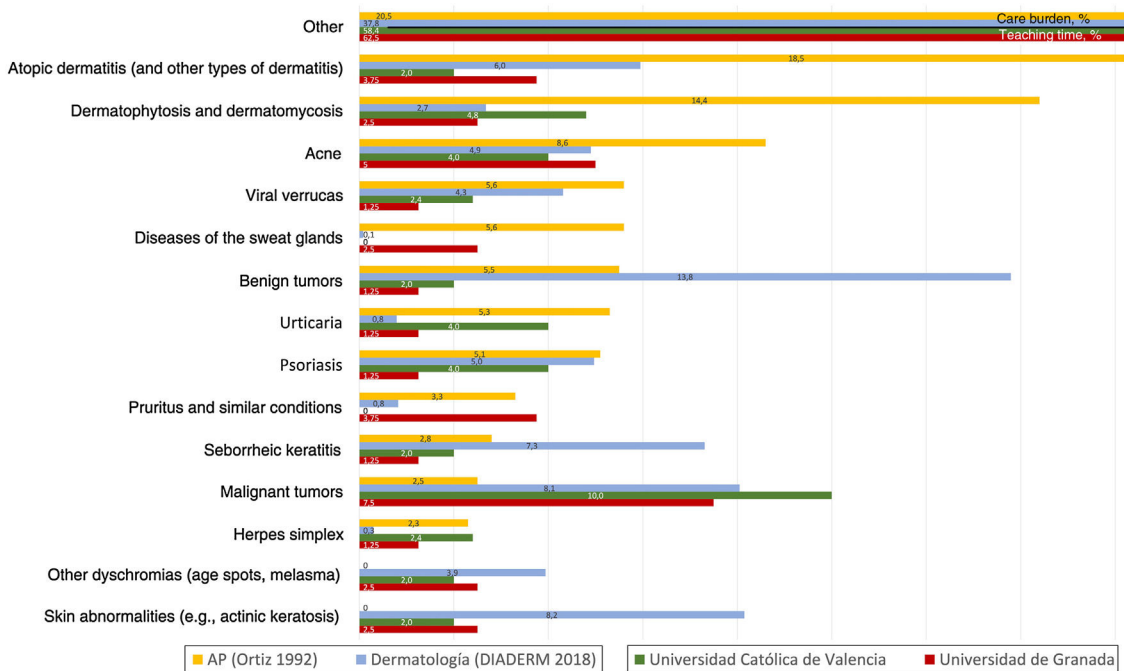


**Figure 1** Relative percentage compared with the total for dermatologic lesions seen or care burden according to skin disease. The data are from primary care and dermatology and have been gathered and modified from Ortiz et al.,<sup>4</sup> Castillo-Arenas et al.,<sup>5</sup> and Buendía-Eisman et al.<sup>7</sup>

We found no other scientific studies applying a similar approach. We selected diagnoses and grouped their frequency in the 3 Spanish reference articles based on similar approaches and attempted to obtain comparable diagnostic groups.

Our study has a series of strengths, for example, its relevance, its approach (which we consider novel), and the recording of comparative data from universities with medical schools in Spain.

We are aware that the importance of a disease depends not only on its frequency, but also on its relevance (associated morbidity and mortality), and that, consequently, our methodology may be subject to limitations. However, we must ask ourselves what a degree subject aims to achieve. Does it intend to represent the areas a specialist should concentrate on or does it intend to train the postgraduate physician (in general and in family and community medicine) in the identification and basic management of the diseases



**Figure 2** Relative percentage of care burden by skin disease according to studies from primary care and dermatology compared with the relative percentage of teaching time according to the theory syllabus by skin diseases. Data from the schools of medicine of the University of Granada and the Catholic University of Valencia.

most commonly seen in the clinic? If we take the latter intention, then we think that taking morbidity and mortality into account is not indispensable in terms of the methodological approach used. While the syllabi of the 2 medical schools selected are very similar to those of the other schools, the subjects and their estimated time requirements do not fully reflect the reality of teaching practice, in which the day-to-day work could be used to apply corrective factors in seminars, workshops, tutorials, self-study, and, of course, practical clinical training. We believe that, regarding these adaptations to the curriculum of the undergraduate subject, it is essential not to exclude the students' opinion on and vision of how to address them.

One of the limitations in the approach to the case burden generated by skin diseases in primary care is the limited number of studies that enable us to assess it in this setting. Therefore, we think that studies such as those of DIADERM<sup>8</sup> should be repeated periodically. The data collected in DIADERM in 2016<sup>7</sup> and the methodology applied could be used in studies in other medical specialties, such as family and community medicine. With respect to the public health system, studies such as DIADERM have highlighted a series of key areas: avoidable referrals from primary care to dermatology,<sup>9</sup> whether there are seasonal variations in diagnoses,<sup>10</sup> how telemedicine has been applied,<sup>11</sup> and the difficulties experienced in coding dermatologic diagnoses.<sup>12</sup> These studies could be reproduced in a similar fashion for other specialties. They have also revealed the scale of major areas in MSDV, such as cutaneous oncology,<sup>13</sup> and some less well represented areas in most settings, such as anogenital and venereal diseases.<sup>14</sup>

## Conclusions

Teaching time devoted to theory largely underrepresents the skin diseases most commonly seen in primary care. We believe that medical graduates should be trained in the identification and basic management of the most frequent diseases seen in general medicine and in primary care. Given that general, rural, and family and community physicians receive between 2.5% and 20% of visits associated with skin diseases, it seems appropriate to reevaluate the type of content that should be assigned more weight or recover teaching hours in the subject of dermatology.

Therefore, based on the results obtained, we believe that it is essential to increase, ideally by means of approaches that support the teaching of theory (e.g., seminars, workshops, case studies, tutorials, guided self-study), the number of hours allocated to dermatitis, infectious skin diseases, acne, psoriasis, urticaria, and, finally, benign neoplasms and the differential diagnosis with malignant neoplasms.

Considering teaching hours by subject or adjusting content that is an alternative to theory classes would result in improved teaching that is better adjusted to the real-world situations students face after graduation and that enables a more suitable approach to and care for the patients they will treat.

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## Conflicts of Interest

The authors declare that they have no conflicts of interest.

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