

ORIGINAL ARTICLE

Public perception of dermatologists in Europe: Results from a population-based survey

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Abstract

Background: The public perception of dermatology has been poorly investigated in Europe.

Objective: To determine the general public's perception of dermatologists in Europe.

Methods: This multinational, cross-sectional study was conducted within the framework of the EADV population-based survey on the 'Burden of skin diseases in Europe'. Data were collected using a web-based online survey on a representative sample of the general populations aged 18 years or more of 27 European countries. Proportional quota sampling with replacement design was used for each country.

Results: A total of 44,689 adult participants responded to the questionnaire, of whom 18,004 visited a dermatologist in the preceding 3 years. The dermatologist was the second most often visited specialist among all medical specialties, with 69.7%, 72.1%, 42.1% and 78.1% of participants in Western Europe (WE), Eastern Europe (EE), Northern Europe (NE) and Southern Europe (SE), respectively, having consulted a dermatologist over the past 24 months. Most participants across all regions agreed that the dermatologist was the first healthcare provider for chronic skin diseases (61.9% in WE, 69.8% in EE, 45.7% in NE and 60.4% in SE) and for skin cancers (65.5% in WE, 67.6% in EE, 42.4% in NE and 63.0% in SE). The five most common reasons for visiting a dermatologist among all participants were: naevi check-up or skin cancer screening (20.2%), chronic skin diseases (16.5%), acute skin diseases (12.4%), cosmetic advice or procedure (10.2%), hyperpigmentation or congenital lesions (9.1%) and hair or nail disorder (7.7%). Most participants (84.6% in WE, 82.5% in EE, 78.3% in NE and 82.8% in SE) were very satisfied/somewhat satisfied with the service provided.

Conclusion: Our study findings underscore the central role of dermatologists in skin health and highlights them as valued and trusted care providers across Europe. Understanding the perceived position of the dermatologist is the first step in improving health policy development and implementation. Notably, access to a dermatologist was lowest in NE, probably reflecting differences in healthcare organizational structures or possibly cultural differences in healthcare seeking behaviour.

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INTRODUCTION

Dermatology is a multifaceted specialty which encompasses a sheer diversity of fields including inflammatory and autoimmune skin diseases, genetic and paediatric skin diseases, infectious and sexually transmitted diseases, environmental and occupational diseases, photodermatology, teledermatology, allergic diseases, drug reactions, dermatopathology, malignant skin diseases, dermatological surgery and aesthetic medicine.

The wide-ranging and complex nature of the specialty translates into dermatologists being responsible for screening, recognizing and treating over 3000 skin diseases. Multiple studies have demonstrated that dermatologists have the highest diagnostic accuracy with regard to skin diseases.^{1,2} These conditions vary from milder to severe life-threatening disorders of all age groups. Dermatologists possess a wide range of competencies, including the use of complex new drugs such as biologics and targeted therapy, the performance of Mohs' micrographic surgery along with complex flaps and graft repairs, phototherapy, patch-testing and cosmetic procedures, among many others. These are heterogeneously performed by hospital-based dermatologists and office-based dermatologists, whether in the public or private sectors. The position of the dermatologist is also highly affected by a country's primary healthcare system, availability of primary care physicians and specialist clinics' access policies.

The role of the dermatologist is all the more important given that skin disease is a leading cause of health burden worldwide.³ Skin and subcutaneous diseases were the fourth leading cause of nonfatal disease burden and disability in 2013.⁴ Skin diseases have been shown to be the most prevalent reason for consultation in general practice.⁵ We recently performed a population-based study in Europe (24 EU countries, plus Norway, Switzerland and the United Kingdom) and found that 43.35% of the adult population reported having had at least one dermatological disease or condition during the previous 12 months.⁶ Projecting this figure on the general population indicates that more than 185 million adults in these 27 countries are potentially affected by a skin disease.

Despite the high prevalence of skin diseases and their potentially severe psychological, and to a lesser extent, physical impact, they are not granted their appropriate health priority in terms of resource allocation for clinical and research funds.^{7,8} Dermatological diseases often have relative good prognosis with low mortality and morbidity rates, putting them at risk to be underrated by the international health community.⁹ Although investigations of the public perception of dermatologists are scarce, there seems to be a gap between the public perception of dermatologists and the reality of their practice.^{10–13} Determining the public perception of dermatologists is essential to better understand patients' behaviour regarding their skin disorders and how they seek healthcare from specialists. This in turn can improve health policy development and implementation, enhance public

awareness and education strategies and insure appropriate research funding allocation.¹⁴

The objectives of this study were to determine the general public perception of dermatologists in Europe within the framework of the population-based survey on the 'Burden of skin diseases in Europe' initiated and supported by the EADV.

METHODS

Study population

This multinational, cross-sectional study was conducted within the framework of the EADV population-based survey on the 'Burden of skin diseases in Europe'. The methods have been detailed in a previous publication.¹⁵

Data were collected using a web-based online survey on a representative sample of the general populations aged 18 years or more of 27 European countries (24 belonging to the European Union plus United Kingdom, Switzerland and Norway). Proportional quota sampling with replacement design was used for each country based on the distribution of the population according to age, sex, administrative region, environment (urban, suburban and rural) and income.

The survey was conducted from 10 November 2020, to 5 August 2021. Institutional review board approvals were not required since the study did not involve any clinical examination and used anonymized data. The sample size for each country was estimated as 1000 to 4000 individuals based on the results from previous studies.^{6,13,15} Only three European countries (Cyprus, Luxembourg and Malta) could not be included, and represent only 0.3% of the total population.

Questionnaire and outcomes

The questionnaire for data collection was designed in English by an International Steering Committee (P Gisondi, T Nijsten, C Paul, L Puig, MA Richard, C Salvalatsru, A Stratigos and M Trakatelli).

The questionnaire consisted of two modules: Module 1—questions asked to all participants; and Module 2—questions asked to participants who reported having visited a dermatologist in the last 3 years.

Module 1 elicited information about socio-demographic characteristics, co-morbidities, presence of a skin condition or disease or unpleasant sensation (itch, prickling, pain, burning or other)¹⁶ in the 12 months prior to the study, medical consultations in the previous 12 months, date of last visit to a dermatologist, main healthcare reference in case of skin disease and acceptability of online consultations. In the questionnaire, acute skin diseases were defined as 'acute or transient skin problems (like skin allergies, rashes, eruptions, skin trauma, wounds, burns); and chronic skin diseases were defined as "recurrent, persisting, long-lasting or relapsing skin disease (like acne,

TABLE 1 Characteristics of the study population.

	Western Europe		Eastern Europe		Northern Europe		Southern Europe	
	12,071		8568		11,958		12,092	
<i>n</i>	<i>n</i>	% (SD)	<i>n</i>	% (SD)	<i>n</i>	% (SD)	<i>n</i>	% (SD)
<i>Gender</i>								
Male	5940	49.3 (0.89)	4162	48.5 (1.06)	5850	49.4 (0.90)	5935	49.1 (0.89)
Female	6131	50.7 (0.89)	4406	51.5 (1.06)	6108	50.6 (0.90)	6157	50.9 (0.89)
<i>Age (years)</i>								
18–24	1242	10.3 (0.54)	999	12.1 (0.69)	1315	11.5 (0.57)	1144	9.1 (0.51)
25–34	1975	16.3 (0.66)	1700	20.2 (0.85)	2166	18.2 (0.69)	1868	14.8 (0.63)
35–44	2003	16.5 (0.66)	1666	19.3 (0.83)	2131	17.9 (0.69)	2339	19.1 (0.70)
45–54	2268	18.8 (0.70)	1687	19.7 (0.84)	2167	18.1 (0.69)	2466	20.7 (0.72)
55–64	2176	18.2 (0.69)	1410	16.4 (0.78)	2131	16.8 (0.67)	2290	19.1 (0.70)
≥65	2407	19.9 (0.71)	1106	12.4 (0.70)	2048	17.6 (0.68)	1985	17.1 (0.67)
<i>Geographic location</i>								
Urban area of a big city	3674	30.6 (0.82)	4304	50.5 (1.06)	3904	27.4 (0.80)	5508	45.5 (0.89)
Suburban area outside a big city or in a medium-sized city	3811	31.9 (0.83)	1918	22.8 (0.89)	4576	42.9 (0.89)	3625	30.5 (0.82)
Rural area or small town	4586	37.5 (0.86)	2346	26.8 (0.94)	3478	29.7 (0.82)	2959	24.0 (0.76)
<i>Co-morbidities in the last 12 months</i>								
Bone and joint diseases	1438	12.4 (0.59)	1638	18.6 (0.82)	2280	16.9 (0.67)	2411	20.3 (0.72)
Cardiovascular diseases	1002	8.9 (0.51)	1182	13.4 (0.72)	1153	6.2 (0.43)	1001	7.9 (0.48)
Diabetes or endocrine or metabolic diseases	1053	9.0 (0.51)	915	10.8 (0.66)	1041	8.3 (0.49)	1006	8.5 (0.50)
Gastrointestinal disorders	1665	14.2 (0.62)	1640	19.7 (0.84)	1576	10.9 (0.56)	2253	20.7 (0.72)
Neurological diseases	568	4.9 (0.39)	742	8.3 (0.59)	688	4.7 (0.38)	474	3.8 (0.34)
Psychiatric disorders	575	5.1 (0.39)	371	4.3 (0.43)	579	4.3 (0.36)	294	2.2 (0.26)
Psychological problems	1560	13.2 (0.60)	1210	14.3 (0.74)	2207	17.1 (0.68)	2024	17.2 (0.67)
Respiratory diseases	1194	10.4 (0.55)	1251	14.7 (0.75)	1287	9.9 (0.54)	1223	10.0 (0.54)
Urinary and genital diseases	622	5.2 (0.40)	785	9.3 (0.62)	764	5.5 (0.41)	1193	10.3 (0.54)
<i>Reported skin problems or skin diseases in the last 12 months</i>								
At least one problem or unpleasant sensation	5952	49.8 (0.89)	4652	54.1 (1.06)	5483	41.5 (0.88)	6899	57.4 (0.88)
At least one problem or disease	5436	45.5 (0.89)	4419	51.5 (1.06)	5101	38.0 (0.87)	6445	53.6 (0.89)
At least one disease excluding skin cancer screening	4731	39.3 (0.87)	4266	49.8 (1.06)	4920	36.8 (0.86)	5998	49.7 (0.89)

dermatitis, eczema, psoriasis, rosacea, chronic urticarial, vitiligo, ...). Module 2 asked specific questions about the dermatology consultation, satisfaction levels and reasons for dissatisfaction.

Statistical analysis

The 27 countries were grouped into four regions: Western Europe (Austria, Belgium, France, Germany, Netherlands and Switzerland), Eastern Europe (Bulgaria, Czech Republic, Hungary, Poland, Romania and Slovakia), Northern Europe (Denmark, Estonia, Finland, Ireland, Latvia, Lithuania, Norway, Sweden, United Kingdom of Great Britain and Northern Ireland) and Southern Europe (Croatia, Greece, Italy, Portugal, Slovenia and Spain). The main outcomes were evaluated across these four regions to investigate difference due to cultural background and/or healthcare systems.

Qualitative and ordinal variables were described by their number, frequency and standard deviation.

RESULTS

Participant characteristics

A total of 44,689 adult participants responded to the questionnaire: 12,071 in Western Europe (WE), 8568 in Eastern Europe (EE), 11,958 in Northern Europe (NE) and 12,092 in Southern Europe (SE). The socio-demographic features of the cohort are summarized in Table 1. There was a slight female predominance in all four regions. Regarding geographic location, responders in WE were mostly living in a rural area or small town (37.5%), responders in EE and SE were in an urban area of a big city (50.5% and 45.5% respectively) and responders in NE were in a suburban area outside

TABLE 2 Physician visits reported by the participants.

	Western Europe 12,071		Eastern Europe 8568		Northern Europe 11,958		Southern Europe 12,092	
<i>n</i>	<i>n</i>	% (SD)	<i>n</i>	% (SD)	<i>n</i>	% (SD)	<i>n</i>	% (SD)
<i>Physician visits in the last 24 months</i>								
General practitioner	9151	75.8 (0.76)	6030	70.1 (0.97)	7901	62.5 (0.87)	9025	76.1 (0.76)
Cardiologist	1643	13.8 (0.62)	1399	15.9 (0.77)	958	6.1 (0.43)	1699	15.1 (0.64)
Gynaecologist	2571	21.6 (0.73)	1581	18.9 (0.83)	1160	6.8 (0.45)	2256	18.7 (0.69)
Urologist	984	8.6 (0.50)	732	8.6 (0.59)	517	3.7 (0.34)	1067	9.2 (0.52)
Venereologist	201	1.8 (0.23)	80	0.9 (0.20)	103	0.8 (0.16)	142	1.1 (0.18)
Rheumatologist	653	5.2 (0.40)	651	7.5 (0.56)	491	3.8 (0.34)	759	6.4 (0.44)
Gastroenterologist	829	6.8 (0.45)	690	7.5 (0.56)	607	4.4 (0.37)	1144	10.4 (0.54)
Diabetologist– endocrinologist	555	4.9 (0.38)	736	8.5 (0.59)	484	3.3 (0.32)	857	7.5 (0.47)
Otolaryngologist/ENT specialist	1200	10.7 (0.55)	468	5.4 (0.48)	373	2.4 (0.27)	876	7.7 (0.47)
Pneumologist	678	5.8 (0.42)	415	4.5 (0.44)	267	1.6 (0.22)	650	5.1 (0.39)
Allergist	379	3.2 (0.32)	600	7.0 (0.54)	328	2.5 (0.28)	670	6.1 (0.43)
Internist	324	1.9 (0.24)	1249	17.0 (0.80)	464	2.0 (0.25)	911	6.8 (0.45)
Neurologist	882	7.8 (0.48)	963	11.1 (0.67)	718	4.3 (0.36)	781	6.4 (0.43)
Psychiatrist	890	7.6 (0.47)	703	8.8 (0.60)	800	6.0 (0.43)	629	4.8 (0.38)
Surgeon	1013	8.5 (0.50)	647	7.6 (0.56)	892	5.8 (0.42)	750	5.9 (0.42)
Plastic surgeon	120	0.9 (0.17)	70	0.8 (0.19)	126	1.0 (0.18)	154	1.2 (0.19)
Specialist of alternative medicine	527	4.1 (0.35)	192	2.0 (0.30)	188	1.3 (0.20)	352	2.9 (0.30)
<i>Date of last visit to a dermatologist</i>								
Less than a year ago	2143	17.8 (0.68)	1722	20.7 (0.86)	1338	9.7 (0.53)	2753	24.1 (0.76)
1 to 2 years ago	1458	12.3 (0.59)	1058	12.6 (0.70)	975	7.8 (0.48)	1604	13.9 (0.62)
2 to 3 years ago	1474	12.2 (0.58)	1000	11.7 (0.68)	962	7.0 (0.46)	1517	13.1 (0.60)
3 to 5 years ago	1032	8.5 (0.50)	767	9.2 (0.61)	775	5.4 (0.41)	1040	8.6 (0.50)
More than 5 years ago	2339	18.9 (0.70)	1535	17.9 (0.81)	1771	12.2 (0.59)	2292	18.3 (0.69)
Has never visited a dermatologist	3625	30.3 (0.82)	2486	27.9 (0.95)	6137	57.9 (0.88)	2886	21.9 (0.74)

a big city or in a medium-sized city (42.9%). Among the participants, 49.8% in WE, 54.1% in EE, 41.5% in NE and 57.4% SE, reported a skin problem or a skin disease in the last 12 months.

Physician visits

Visits to physicians of different specialties are summarized in Table 2 and Figure 1.

Most participants visited their general practitioner in the past 24 months: 75.8% in WE, 70.1% in EE, 62.5% in NE and 76.1% in SE. The dermatologist was the second most often visited specialist among all medical specialties, with 69.7%, 72.1%, 42.1% and 78.1% of participants in Western Europe (WE), Eastern Europe (EE), Northern Europe (NE) and Southern Europe (SE), respectively, having consulted a dermatologist over the past 24 months. Likewise, visits to a dermatologist in the preceding 3 years were mostly reported by participants in SE (51.1%), followed by EE (45.0%), WE (42.3%) and NE (24.5%).

Referral specialist for skin diseases

When faced with an acute skin disease, participants in WE declared that their first healthcare reference was either the general practitioner (GP) (43.2%) or the dermatologist (43.9%). Most participants in EE and SE acknowledged that the dermatologist was the first healthcare provider for acute skin diseases (60.8% and 47.3% respectively), followed by the GP (24.1% and 38.2% respectively). Lastly, most participants

(46.9%) in NE reported consulting the GP first, followed by the dermatologist (32.3%). Conversely, most participants across all regions agreed that the dermatologist was the first healthcare provider for chronic skin diseases (61.9% in WE, 69.8% in EE, 45.7% in NE and 60.4% in SE) and for skin cancers (65.5% in WE, 67.6% in EE, 42.4% in NE and 63.0% in SE). As for sexually transmitted diseases, the referral pattern differed among the four regions and the dermatologist was declared as the first healthcare reference in 14.5%, 19.9%, 7.4% and 13.4% of participants in WE, EE, NE and SE respectively. The results are detailed in Table 3.

Acceptability of online consultations

When asked whether they would be willing to undergo online medical consultations, most participants responded 'yes, certainly/yes, probably' (54.5% in EE, 57.2% in NE, 58.6 in SE), except in WE whereby 58.4% of participants responded 'no, probably not/no, certainly' (Table 4, Figure S1).

Visit to the dermatologist

The following data were collected from the 18,004 participants who reported having visited a dermatologist in the preceding 3 years ($n = 5075$ in WE, $n = 3780$ in EE, $n = 3275$ in NE and $n = 5874$ in SE).

The five most common reasons for visiting a dermatologist among all participants were: naevi check-up or skin cancer screening (20.2%), chronic skin diseases (16.5%), acute skin diseases (12.4%), cosmetic advice or procedure

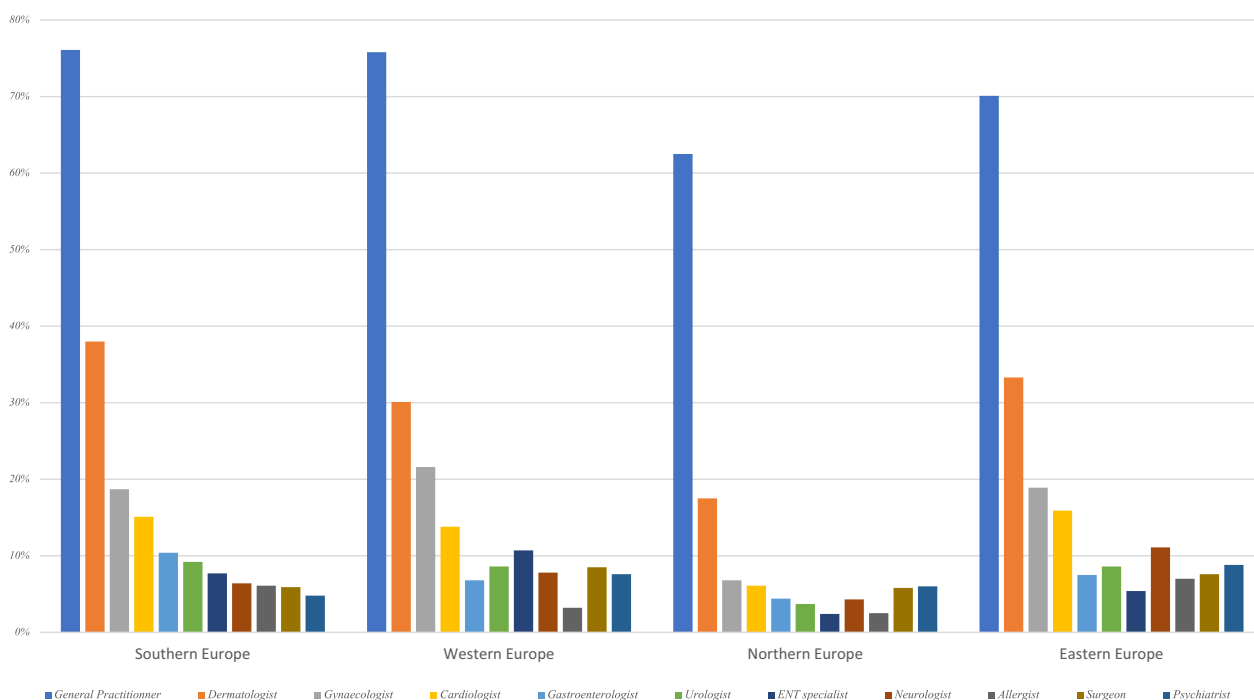


FIGURE 1 Physician visits reported by the participants in the last 24 months.

TABLE 3 Participants' first healthcare reference according to skin problems.

	Western Europe		Eastern Europe		Northern Europe		Southern Europe	
	12,071		8568		11,958		12,092	
<i>n</i>	<i>n</i>	% (SD)	<i>n</i>	% (SD)	<i>n</i>	% (SD)	<i>n</i>	% (SD)
<i>Acute skin disease</i>								
A general practitioner	5208	43.2 (0.88)	2135	24.1 (0.91)	5002	46.9 (0.89)	4623	38.2 (0.87)
A dermatologist	5273	43.9 (0.89)	5173	60.8 (1.03)	4581	32.3 (0.84)	5774	47.3 (0.89)
A pharmacist without going to the doctor	482	3.8 (0.34)	325	3.9 (0.41)	682	6.4 (0.44)	502	4.4 (0.37)
The emergency department	387	3.1 (0.31)	375	4.6 (0.44)	493	3.6 (0.33)	759	6.7 (0.45)
I manage it on my own without asking for advice	454	3.8 (0.34)	339	4.0 (0.42)	752	6.9 (0.45)	220	1.6 (0.23)
Other	267	2.2 (0.26)	221	2.5 (0.33)	448	4.0 (0.35)	214	1.7 (0.23)
<i>Chronic skin diseases</i>								
A general practitioner	3103	26.0 (0.78)	1570	17.2 (0.80)	3334	33.6 (0.85)	3761	30.9 (0.82)
A dermatologist	7509	61.9 (0.87)	5908	69.8 (0.97)	6357	45.7 (0.89)	7227	60.4 (0.87)
A pharmacist without going to the doctor	457	3.7 (0.34)	236	2.9 (0.35)	591	5.5 (0.41)	397	3.4 (0.32)
The emergency department	170	1.4 (0.21)	131	1.5 (0.26)	187	1.5 (0.22)	168	1.3 (0.20)
I manage it on my own without asking for advice	495	4.2 (0.36)	450	5.4 (0.48)	960	8.8 (0.51)	283	2.0 (0.25)
Other	337	2.8 (0.30)	273	3.1 (0.37)	529	4.8 (0.38)	256	2.0 (0.25)
<i>Skin cancer</i>								
A general practitioner	2598	21.3 (0.73)	1250	14.3 (0.74)	3728	39.5 (0.88)	3042	24.6 (0.77)
A dermatologist	7850	65.5 (0.85)	5854	67.6 (0.99)	6216	42.4 (0.89)	7533	63.0 (0.86)
A pharmacist without going to the doctor	356	2.9 (0.30)	205	2.7 (0.34)	396	3.4 (0.33)	341	3.0 (0.30)
The emergency department	550	4.4 (0.36)	633	8.1 (0.58)	652	6.0 (0.43)	684	5.7 (0.41)
I manage it on my own without asking for advice	325	2.8 (0.29)	217	2.6 (0.34)	406	3.8 (0.34)	124	1.0 (0.17)
Other	392	3.2 (0.32)	409	4.8 (0.45)	560	4.7 (0.38)	368	2.7 (0.29)
<i>Sexually transmitted diseases</i>								
A general practitioner	4050	33.0 (0.84)	1154	13.0 (0.71)	4133	41.9 (0.88)	3803	31.7 (0.83)
A dermatologist	1720	14.5 (0.63)	1671	19.9 (0.85)	1154	7.4 (0.47)	1676	13.4 (0.61)
A pharmacist	309	2.5 (0.28)	165	2.0 (0.30)	346	3.1 (0.31)	239	2.1 (0.25)
A gynaecologist	3820	31.7 (0.83)	2707	31.8 (0.99)	3122	22.7 (0.75)	3548	28.3 (0.80)
A urologist	1222	10.5 (0.55)	695	7.6 (0.56)	793	5.9 (0.42)	1176	10.0 (0.53)
A venereologist	434	3.4 (0.32)	1768	21.0 (0.86)	1696	12.2 (0.59)	1302	11.8 (0.58)
Other	516	4.3 (0.36)	408	4.6 (0.44)	714	6.8 (0.45)	348	2.7 (0.29)

(10.2%), hyperpigmentation or congenital lesions (9.1%), and hair or nail disease (7.7%). These proportions differed slightly across the four regions. While naevi check-up or skin cancer screening was the most common reason reported by participants in WE and SE (30.7% and 22.5% respectively), it was the fourth in EE and NE (12.4% and 9.8% respectively). Consultations for cosmetic advice or procedures were reported by 14.0%, 10.6%, 9.9% and 6.9%

of EE, NE, SE and WE responders respectively. Results are detailed in [Table 5](#).
In all four regions, dermatological visits were mostly for diagnostic purposes (54% in WE, 46.7 in EE, 35.9 in NE and 55.2 in SE), followed by follow-up consultations (31.6% in WE, 35.1% in EE, 35% in NE and 26.4% in SE), treatment prescription (initiation or renewal) (19.1% in WE, 29.2% in EE, 30.7% in NE and 22.7% in SE) and technical procedures (9%

TABLE 4 Participants' acceptability of online consultations.

	Western Europe		Eastern Europe		Northern Europe		Southern Europe	
	12,071		8568		11,958		12,092	
<i>n</i>	<i>n</i>	% (SD)	<i>n</i>	% (SD)	<i>n</i>	% (SD)	<i>n</i>	% (SD)
Yes, certainly	1231	10.4 (0.55)	1604	18.1 (0.82)	1754	15.1 (0.64)	2365	18.8 (0.70)
Yes, probably	3742	31.2 (0.83)	3144	36.4 (1.02)	4854	42.1 (0.88)	4846	39.8 (0.87)
No, probably not	4650	38.2 (0.87)	2648	30.8 (0.98)	3854	30.2 (0.82)	3757	31.5 (0.83)
No, certainly not	2448	20.2 (0.72)	1172	14.6 (0.75)	1496	12.6 (0.59)	1124	9.9 (0.53)

in WE, 8.1% in EE, 12.5% in NE and 7.6% in SE) (Table 5). In all four regions, participants reported visiting office-based dermatologists in the private sector (67.8% in WE, 50.9% in EE, 40.9% in NE and 50.4% in SE).

Participants' assessment of last dermatological consultation

When the participants who had consulted a dermatologist over the preceding 3 years were asked to assess the last consultation, 84.6% in WE, 82.5% in EE, 78.3% in NE and 82.8% in SE were very satisfied/somewhat satisfied with the service provided. Likewise, the majority (80.5% in WE, 78.7% in EE, 71.2% in NE and 77.7%) were very satisfied/somewhat satisfied with the information provided by the dermatologist. Most participants (86.2% in WE, 84.8% in EE, 77.6% in NE and 84.7% in SE) considered the dialogue with the dermatologist very easy/rather easy. Information was mostly provided orally across all regions (74.1% in WE, 79.6% in EE, 56% in NE and 77.9% in SE). When asked about level of satisfaction with the treatment prescribed by the dermatologist, most participants (81.9 in WE, 81.8 in EE, 80.2 in NE and 83.0% in SE) reported being very satisfied/somewhat satisfied. The most frequently reported reasons for dissatisfaction among participants who were somewhat dissatisfied/very dissatisfied was treatment ineffectiveness (62.5%) and high cost of treatment (24.5% in all four regions – 17.5% in WE, 25.5% in EE, 19.9% in NE and 30.6% in SE). Results are detailed in Table 6 and Figure S2.

DISCUSSION

To the best of our knowledge, this is the first and largest population-based study examining the public perception of dermatology and dermatologists across Europe. Three population-based studies focusing on public perception of dermatologists had been previously carried out in Italy,¹² Germany,¹⁰ and France.¹³ The study we are reporting on herein covers 24 additional countries, leading to a total of 44,689 adult participants. While the methods of this study are identical to those of the French survey, those of the Italian and German surveys differed. The first included 1500

participants, but in a specific age range (35–54 years), while the latter involved 1015 adults, 319 of whom had consulted a dermatologist in the last 12 months. Both studies used a telephone-based structured questionnaire, which may have led to a response bias.

The data from our survey highlight the central position occupied by the dermatologist as a core healthcare provider for skin problems. It is noteworthy that the dermatologist was reported to be the most frequently consulted specialist among all medical specialties (except for general practitioners, as expected), with 30% of subjects surveyed stating that they had consulted a dermatologist over the past 24 months. Moreover, this study underscores the importance of dermatology and the valuable contribution of dermatologists in the management of various skin disorders. While the cosmetic dermatology subspecialty receives greater public attention—particularly on social media platforms, it is important to highlight that only 10% of the consultations dealt with cosmetic advice or procedures (only five countries exceeded 15%, but 20% was not reached).

The dermatologist was the first healthcare provider contacted for acute skin problems in all Europe (44% in WE, 61% in EE and 47% in SE), except in NE (32%). Possible explanations are the differences in the organizational framework in which health services are delivered, such as the number of dermatologists per country, the need to consult the general practitioner prior to referral to the dermatologist and different referral pathways (e.g. to allergologists for eczema).^{17,18} Indeed, 33% of responders in the NE region were from the United Kingdom, where one of the lowest number of dermatologists per capita.^{17,19} Moreover, while training and practice in dermatology are combined with venereology in most countries, genitourinary medicine is a separate specialty in the United Kingdom (probably explaining the lower referral to a dermatologist for sexually transmitted diseases). Cultural difference in healthcare seeking behaviour may also in part explain the exception of NE, since a lower proportion of participants in NE reported visiting the GP in the last 24 months (63%). Nevertheless, the dermatologist remained the major player in chronic skin diseases and skin cancer management.

This calls for a meaningful collaboration between general practitioners and dermatologists and a strengthened shared care in the management of patients with skin diseases.²⁰ This can in turn secure more time for dermatologists in countries

TABLE 5 Description of the participants' visits to the dermatologist in the preceding 3 years.

	Western Europe		Eastern Europe		Northern Europe		Southern Europe	
	5075		3780		3275		5874	
Visits to the dermatologist in the preceding 3 years (<i>n</i>)	<i>n</i>	% (SD)	<i>n</i>	% (SD)	<i>n</i>	% (SD)	<i>n</i>	% (SD)
<i>Main reasons for consulting a dermatologist</i>								
Naevi check-up or skin cancer screening	1,528	30.7 (1.27)	498	12.4 (1.05)	373	9.8 (1.02)	1,244	22.5 (1.07)
Chronic (recurrent or persistent) skin disease	718	13.8 (0.95)	626	17.3 (1.21)	633	21.8 (1.42)	989	16.4 (0.95)
Acute or transient skin problem	581	11.8 (0.89)	575	14.7 (1.13)	419	11.7 (1.10)	651	10.8 (0.79)
Cosmetic advice or procedure	356	6.9 (0.70)	521	14.0 (1.11)	377	10.6 (1.05)	580	9.9 (0.76)
Hyperpigmentation (brown or dark stains or spots) or congenital lesions	458	8.9 (0.78)	320	8.6 (0.89)	273	7.7 (0.91)	586	9.6 (0.75)
Hair or nail disease	322	6.4 (0.67)	377	10.5 (0.98)	232	7.3 (0.89)	461	7.8 (0.69)
Skin infections (fungal, bacterial, viral or parasitic)	296	5.7 (0.64)	317	7.9 (0.86)	254	8.1 (0.94)	426	7.2 (0.66)
Keratosis or skin growths	218	4.0 (0.54)	171	4.6 (0.67)	172	5.5 (0.78)	329	5.4 (0.58)
Mucosal disorder (ulcers, sores)	166	3.2 (0.48)	100	2.6 (0.51)	130	4.1 (0.68)	146	2.5 (0.40)
Skin cancer	148	3.0 (0.47)	44	1.2 (0.35)	120	4.3 (0.69)	103	1.8 (0.34)
Chronic wounds or chronic venous insufficiency	101	2.0 (0.38)	83	2.3 (0.47)	99	3.4 (0.62)	109	1.8 (0.34)
Sexually transmitted disease	72	1.3 (0.32)	60	1.7 (0.42)	89	2.6 (0.55)	99	1.6 (0.32)
<i>Type of consultation</i>								
A diagnostic consultation	2660	54.0 (1.37)	1725	46.7 (1.59)	1210	35.9 (1.64)	3128	55.2 (1.27)
A follow-up consultation	1651	31.6 (1.28)	1317	35.1 (1.52)	1066	35.0 (1.63)	1734	26.4 (1.13)
A treatment prescription	976	19.1 (1.08)	1126	29.2 (1.45)	1057	30.7 (1.58)	1295	22.7 (1.07)
A technical procedure	479	9.0 (0.79)	332	8.1 (0.87)	414	12.5 (1.13)	462	7.6 (0.68)
<i>Place of consultation</i>								
In a private practice	3239	63.9 (1.32)	1581	43.1 (1.58)	998	34.9 (1.63)	2539	44.5 (1.27)
At the office of a government-funded doctor	693	14.8 (0.98)	1091	29.0 (1.45)	755	22.7 (1.44)	1317	22.5 (1.07)
In a government-funded hospital	657	11.9 (0.89)	555	13.6 (1.09)	849	22.7 (1.43)	1335	21.7 (1.05)
In a private clinic	204	3.8 (0.53)	342	8.7 (0.90)	340	9.2 (0.99)	424	7.1 (0.66)
Other	115	2.2 (0.40)	87	2.3 (0.48)	136	4.0 (0.67)	98	1.6 (0.32)
I do not know	167	3.4 (0.50)	124	3.2 (0.56)	197	6.4 (0.84)	161	2.7 (0.42)

TABLE 6 Participants' assessment as to last dermatologist consultation.

	Western Europe		Eastern Europe		Northern Europe		Southern Europe	
	5075		3780		3275		5874	
Visits to the dermatologist in the last 3 years (<i>n</i>)	<i>n</i>	% (SD)	<i>n</i>	% (SD)	<i>n</i>	% (SD)	<i>n</i>	% (SD)
<i>Satisfaction with the service provided during the last consultation</i>								
Very satisfied	2072	40.1 (1.35)	1567	39.7 (1.56)	1304	42.0 (1.69)	2785	47.3 (1.28)
Somewhat satisfied	2229	44.5 (1.37)	1569	42.8 (1.58)	1229	36.3 (1.65)	2064	35.5 (1.22)
Neither satisfied nor dissatisfied	536	10.6 (0.85)	397	10.9 (0.99)	461	14.0 (1.19)	670	11.2 (0.81)
Somewhat dissatisfied	151	3.0 (0.47)	143	4.0 (0.63)	145	3.9 (0.67)	202	3.4 (0.47)
Very dissatisfied	61	1.2 (0.30)	65	1.6 (0.41)	67	1.8 (0.46)	105	1.7 (0.33)
I could not say	26	0.5 (0.20)	39	1.0 (0.31)	69	2.0 (0.48)	48	0.8 (0.23)
<i>Consider the dialogue with the dermatologist easy</i>								
Very easy	2506	49.2 (1.38)	1708	43.7 (1.58)	1374	42.2 (1.69)	2742	46.1 (1.27)
Rather easy	1868	37.0 (1.33)	1507	41.1 (1.57)	1186	35.4 (1.64)	2234	38.6 (1.24)
Neither easy nor difficult	501	9.8 (0.82)	429	11.5 (1.02)	509	16.4 (1.27)	695	11.9 (0.83)
Rather difficult	154	3.1 (0.48)	99	2.8 (0.52)	145	4.3 (0.70)	150	2.5 (0.40)
Very difficult	46	0.9 (0.26)	37	1.0 (0.31)	61	1.8 (0.45)	53	0.9 (0.24)
<i>Satisfaction with dermatologist information</i>								
Very satisfied	1874	35.9 (1.32)	1410	35.3 (1.52)	1123	34.8 (1.63)	2580	43.9 (1.27)
Somewhat satisfied	2220	44.6 (1.37)	1580	43.4 (1.58)	1189	36.4 (1.65)	1973	33.8 (1.21)
Neither satisfied nor dissatisfied	625	12.5 (0.91)	452	12.3 (1.05)	486	14.5 (1.21)	766	12.9 (0.86)
Somewhat dissatisfied	198	4.0 (0.54)	193	5.4 (0.72)	236	7.0 (0.87)	291	4.9 (0.55)
Very dissatisfied	86	1.6 (0.35)	80	2.0 (0.45)	101	2.9 (0.58)	160	2.7 (0.42)
I could not say	72	1.4 (0.32)	65	1.6 (0.40)	140	4.3 (0.70)	104	1.7 (0.33)
<i>Information delivery methods</i>								
Oral explanations	3770	74.1 (1.21)	3013	79.6 (1.28)	2114	56.0 (1.70)	4587	77.9 (1.06)
Booklet, brochure, leaflet	515	10.4 (0.84)	618	15.8 (1.16)	677	23.8 (1.46)	657	10.7 (0.79)
Website	510	9.9 (0.82)	362	9.8 (0.95)	531	21.3 (1.40)	456	7.8 (0.69)
Therapeutic education tool (video, cards, ruler, calculator...)	295	5.9 (0.65)	219	5.7 (0.74)	301	9.2 (0.99)	419	7.0 (0.65)
Poster	221	4.3 (0.56)	162	4.3 (0.64)	224	8.1 (0.93)	163	2.8 (0.43)
Other	448	9.0 (0.79)	215	5.6 (0.73)	276	9.8 (1.02)	400	6.9 (0.65)
<i>Satisfaction with the treatment prescribed by the dermatologist</i>								
Very satisfied	966	36.3 (1.85)	1138	38.4 (1.80)	934	44.4 (2.06)	1767	47.0 (1.59)
Somewhat satisfied	1175	45.6 (1.91)	1177	43.4 (1.83)	823	35.8 (1.98)	1353	36.0 (1.53)
Neither satisfied nor dissatisfied	298	11.9 (1.24)	288	10.6 (1.14)	304	12.5 (1.37)	405	10.4 (0.97)
Somewhat dissatisfied	105	4.1 (0.76)	140	5.3 (0.83)	112	4.6 (0.87)	145	3.8 (0.61)
Very dissatisfied	39	1.4 (0.46)	51	1.7 (0.48)	49	1.9 (0.57)	80	2.2 (0.46)
Non concerned/I could not say	19	0.7 (0.32)	17	0.6 (0.28)	21	0.8 (0.36)	27	0.7 (0.26)
<i>Reason for dissatisfaction</i>								
I found the treatment to be ineffective	N = 144		N = 191		N = 161		N = 225	
	94	64.6 (7.81)	139	73.6 (6.25)	76	45.0 (7.68)	141	63.3 (6.30)

(Continues)

TABLE 6 (Continued)

	Western Europe		Eastern Europe		Northern Europe		Southern Europe	
	5075		3780		3275		5874	
Visits to the dermatologist in the last 3 years (<i>n</i>)	<i>n</i>	% (SD)	<i>n</i>	% (SD)	<i>n</i>	% (SD)	<i>n</i>	% (SD)
The treatment was too expensive	25	17.5 (6.21)	48	25.5 (618)	34	19.9 (6.16)	70	30.6 (6.02)
The treatment resulted in side effects	22	15.2 (5.86)	27	14.6 (5.01)	23	18.2 (5.96)	26	11.5 (4.17)
The wait to get the treatment was too long	14	10.6 (5.02)	23	12.3 (4.65)	29	17.0 (5.80)	27	11.4 (4.15)
The treatment was too restrictive	14	9.2 (4.73)	11	6.1 (3.40)	27	16.7 (5.76)	21	9.0 (3.74)
Other reason	14	9.2 (4.73)	10	5.2 (3.15)	18	8.9 (4.41)	18	8.3 (3.61)

with low numbers of practicing dermatologists, in particular for dermatology telemedicine which was generally accepted by the participants in our study. Telemedicine has proven capable of improving access to dermatology for underserved patient populations, especially those residing in peripheral locations, as well as providing dermatology support in nursing homes or home care settings.²¹

Patient satisfaction is considered a proxy for perceived quality of clinical care. The results of this study reveal the high level of satisfaction expressed by participants who have consulted a dermatologist in the last 3 years. Regardless of the healthcare system or the number of dermatologists practicing in each country, most (>75%) subjects surveyed across Europe turned out to be satisfied with the service and information provided by the dermatologist.

The major limitation of this study design involves the use of a web-based self-administered questionnaire, which is not as optimal as face-to-face surveys. Nonetheless, Internet-based questionnaires remain a well-accepted method for quantitative data collection. Advantages of this approach over face-to-face interviews include increased cost-effectiveness and wider access to geographically distant participants, as achieved in our study. In addition, the use of questionnaires allows for more anonymity and confidentiality, as well as less social pressure. In our study, we decided to rely on self-administered questionnaires, primarily because they facilitated the access to people all over Europe and were representative of the national populations in each country. Another reason for using this methodology was the positive experience with this method in the study set up by the French Society of Dermatology, 'Objectifs Peau', which mobilized more than 20,000 individuals representative of the French population.⁶ Another limitation of our survey is that the statements regarding experienced satisfaction were not evaluated objectively but rather expressed as personal and subjective evaluations. However, this was, in fact, the explicit intention of our study. Lastly, only adult patients aged 18 years and above were invited to participate in the survey.

CONCLUSION

Our study findings underscore the central role of dermatologists in skin health and highlights their role as valued and trusted care providers across Europe. Dermatology is viewed as a complex medical specialty, with a wide range of subspecialties. Understanding the perceived position of the dermatologist in the healthcare system is the first step in enhancing access to dermatology care and developing interventions for skin disease. Further research into models of care and health systems' organization for patients with skin disease is needed. This could in turn translate into educational and political strategies aimed at optimizing the process of patient referral, thereby improving patient care and satisfaction.

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CONFLICT OF INTEREST STATEMENT

None.

DATA AVAILABILITY STATEMENT

Data can be provided for valid scientific non-commercial purposes.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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