

# Research trends in Dermatology specialty theses: A bibliometric analysis of the national thesis center in Turkey (2020–2025)

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## Abstract

**Objective:** Dermatology specialty theses reflect evolving research priorities and scientific focus areas within the discipline. Evaluating their thematic distribution provides insight into academic trends and emerging research directions. To analyze dermatology specialty theses completed between 2020 and 2025 in terms of annual output and disease-oriented research focus.

**Materials and methods:** A retrospective bibliometric analysis was conducted using data obtained from the National Thesis Center database. A total of 529 dermatology specialty theses were evaluated. Theses were categorized according to primary disease focus, and the ten most frequently studied disease groups were identified. Annual proportional distributions were calculated using descriptive statistics.

**Results:** The number of theses increased throughout the study period, peaking in 2025. Psoriasis was the most frequently studied disease overall (20.2%), followed by acne vulgaris and skin malignancies. In recent years, a relative increase was observed in hidradenitis suppurativa and bullous diseases. Subgroup analysis demonstrated that inflammatory markers, systemic associations, and immunologic parameters were among the most commonly investigated research themes.

**Conclusion:** Between 2020 and 2025, dermatology specialty research demonstrated sustained interest in highly prevalent inflammatory dermatoses while increasingly focusing on systemic involvement and immunologic mechanisms. These findings reflect alignment between specialty training research and global dermatology trends.

**Keywords:** Dermatology specialty theses, Psoriasis bibliometric analysis, Research trends, Inflammatory dermatoses.

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## **Introduction**

Dermatology has a broad clinical spectrum encompassing both inflammatory and neoplastic diseases, and in recent years it has become a discipline in which its association with systemic diseases has been increasingly emphasized. In particular, there has been a growing number of studies focusing on the cardiometabolic, psychiatric, and immunological dimensions of chronic inflammatory dermatoses such as psoriasis, acne vulgaris, and hidradenitis suppurativa (1,2). Similarly, cutaneous malignancies and autoimmune bullous diseases continue to be intensively investigated with regard to diagnostic and prognostic markers (3). Specialty theses represent important scientific outputs that reflect the academic trends and research priorities of a discipline. The distribution of thesis topics is closely related to clinical burden, current therapeutic approaches, technological advancements, and gaps in the literature (4). Therefore, examining the disease-based distribution of dermatology theses within a specific time frame is valuable for revealing the scientific orientation of the field.

In this study, our aim was to analyze dermatology specialty theses completed between 2020 and 2025 in terms of annual output and disease-oriented research focus.

## **Materials and methods**

### **Study design**

This study was designed as a retrospective bibliometric analysis. Dermatology residency theses completed between January 2020 and December 2025 were systematically reviewed.

### **Data source and selection criteria**

Theses were identified through the National Thesis Center database of the Council of Higher Education (Turkey), which is a publicly accessible repository of academic theses.

Only dermatology residency theses completed within the specified time frame were included in the analysis. Theses from other medical specialties, duplicate records, and inaccessible full records were excluded.

### **Data extraction**

For each thesis, the following variables were recorded:

- Year of completion
- Thesis title
- Primary disease focus

Each thesis was categorized according to its main disease entity based on title content. When necessary, disease classification was standardized to ensure consistency (e.g., psoriasis, acne vulgaris, skin malignancies, bullous diseases, hair disorders, dermatitis group, urticaria, hidradenitis suppurativa, rosacea, and vitiligo).

## Disease classification

The ten most frequently studied diseases were identified according to overall frequency. For major disease groups, subgroup analyses were performed based on thematic keywords identified within thesis titles (e.g., inflammatory markers, genetic polymorphisms, treatment response, metabolic associations, and psychosocial parameters).

## Statistical analysis

Descriptive statistics were used to summarize numerical and proportional distributions. Annual thesis counts were calculated, and the proportional distribution of diseases was expressed as percentages for each year. Trends were visually evaluated using line graphs. Statistical analyses were performed using spreadsheet-based calculations and graphical visualization tools.

## Results

A total of 529 dermatology specialty theses were included in the study. The vast majority of the theses were clinical studies ( $n = 520$ , 98.3%), while only 9 theses (1.9%) were classified as preclinical studies. The number of theses evaluating treatment efficacy was found to be 103 (19.5%). The number of theses conducted in the field of psychodermatology was 43 (8.1%), whereas 21 theses (4.0%) were identified in the field of cosmetic dermatology. Only 3 theses (0.6%) employed artificial intelligence-based methods, indicating that this area remains quite limited (Table 1).

**Table 1:** Distribution of theses according to general characteristics (n=529)

Characteristic	n	%
Total Theses	529	100
Clinical Study	520	98.3
Preclinical Study	9	1.7
Treatment Effect	103	19.5
Psychodermatology	43	8.1
Cosmetic Dermatology	21	4.0
Artificial Intelligence	3	0.6

A total of 529 dermatology residency theses completed between 2020 and 2025 were analyzed. Psoriasis was the most frequently studied disease, accounting for 107 theses (20.2%). Acne vulgaris ranked second with 55 theses (10.4%), followed by skin malignancies with 41 theses (7.8%). Hair disorders constituted 39 theses (7.4%). Rosacea and hidradenitis suppurativa were equally represented, each with 32 theses (6.0%). Urticaria accounted for 31 theses (5.9%), while bullous diseases were represented by 30 theses (5.7%). Dermatitis-related conditions comprised 24 theses (4.5%), and general dermatology topics accounted for 18 theses (3.4%). Vitiligo was studied in 15 theses (2.8%). The remaining 105 theses (19.8%) covered

various less frequently studied dermatological conditions categorized as “Other.” (Table 2).

**Table 2:** Top 10 most frequently studied diseases (n=529)

<b>Disease group</b>	<b>n</b>	<b>%</b>
Psoriasis	107	20.2
Acne vulgaris	55	10.4
Skin malignancies	41	7.8
Hair disorders	39	7.4
Rosacea	32	6.0
Hidradenitis suppurativa	32	6.0
Urticaria	31	5.9
Bullous diseases	30	5.7
Dermatitis group	24	4.5
General dermatology	18	3.4
Vitiligo	15	2.8
Other	105	19.8

When the distribution of subtopics within the most frequently studied disease groups was examined, serum/biomarker studies (n=34, 6.4%) were the most common in psoriasis theses. These were followed by treatment response studies (n=21, 4.0%), cardiometabolic associations (n=19, 3.6%), gene/polymorphism studies (n=18, 3.4%), and psychiatric associations (n = 15, 2.8%). This distribution indicates that psoriasis has been addressed comprehensively in terms of both systemic inflammation and its multidisciplinary impacts. In acne vulgaris theses, treatment studies (n=22, 4.2%) were the most frequent, followed by biomarker studies (n=14, 2.6%), oxidative stress research (n=10, 1.9%), and psychiatric association studies (n=9, 1.7%). Theses on cutaneous malignancies primarily focused on dermoscopy (n=16, 3.0%), immunohistochemical markers (n=14, 2.6%), and prognostic factors (n=11, 2.1%). Within the hair disorders group, alopecia areata (n=14, 2.6%) was the most commonly studied condition, followed by androgenetic alopecia (n=9, 1.7%) and treatment-related studies (n=9, 1.7%). In the bullous diseases group, pemphigus vulgaris (n=12, 2.3%) was the most prominent topic, while immunofluorescence/biomarker-based studies (n=10, 1.9%) and pemphigoid (n=8, 1.5%) constituted other subcategories. In the dermatitis group, the subtopics included seborrheic dermatitis (n = 10, 1.9%), atopic dermatitis (n=8, 1.5%), and contact dermatitis (n=6, 1.1%) (Table 3).

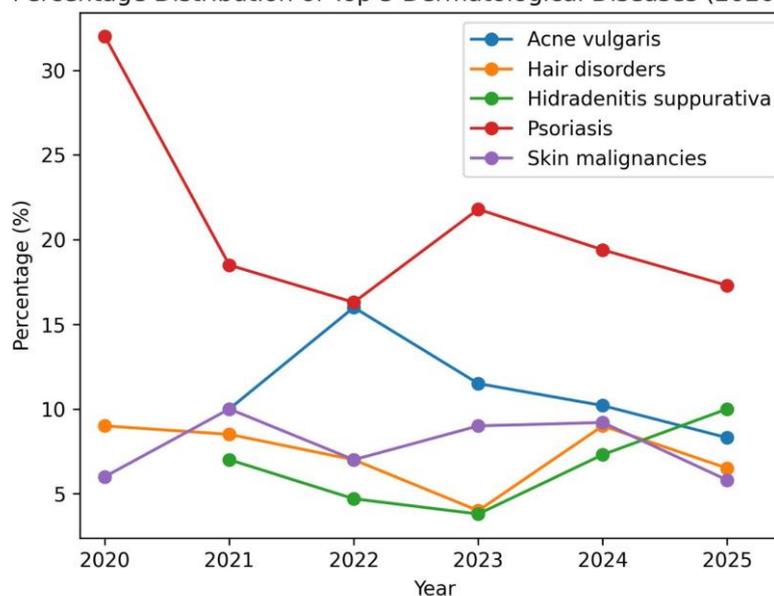
**Table 3:** Subcategory distribution of major disease groups (n=529)

<b>Disease</b>	<b>Subcategory</b>	<b>n</b>	<b>% (of total theses)</b>
Psoriasis	Serum/Biomarker studies	34	6.4
Psoriasis	Gene/Polymorphism	18	3.4
Psoriasis	Treatment response	21	4.0

Psoriasis	Cardiometabolic association	19	3.6
Psoriasis	Psychiatric association	15	2.8
Acne vulgaris	Treatment studies	22	4.2
Acne vulgaris	Biomarker studies	14	2.6
Acne vulgaris	Psychiatric association	9	1.7
Acne vulgaris	Oxidative stress	10	1.9
Skin malignancies	Dermoscopy	16	3.0
Skin malignancies	Prognostic factors	11	2.1
Skin malignancies	Immunohistochemical markers	14	2.6
Hair disorders	Alopecia areata	14	2.6
Hair disorders	Androgenetic alopecia	9	1.7
Hair disorders	Treatment studies	9	1.7
Bullous diseases	Pemphigus vulgaris	12	2.3
Bullous diseases	Pemphigoid	8	1.5
Bullous diseases	Immunofluorescence/Biomarkers	10	1.9
Dermatitis group	Seborrheic dermatitis	10	1.9
Dermatitis group	Atopic dermatitis	8	1.5
Dermatitis group	Contact dermatitis	6	1.1

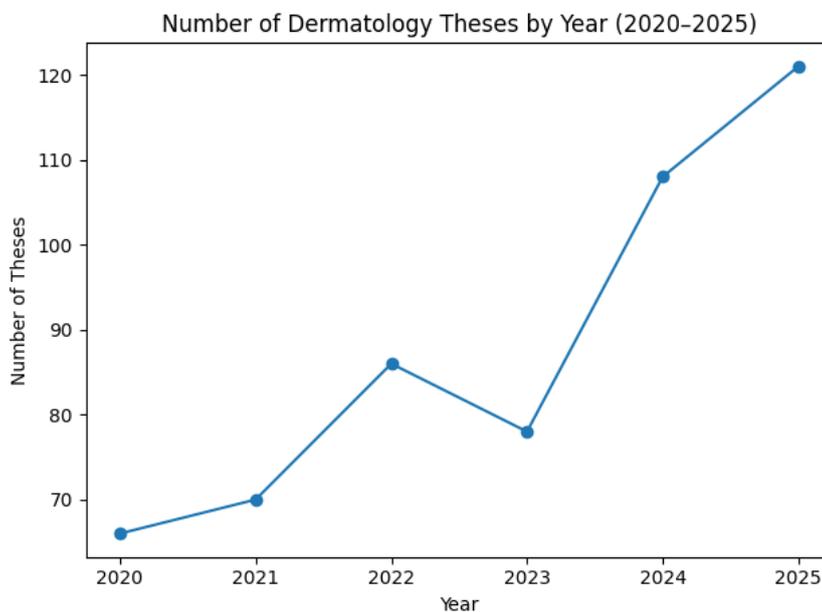
The percentage distribution of the five most frequently studied dermatological diseases between 2020 and 2025 is presented. Psoriasis stands out as the disease with the highest proportion across all years. Acne vulgaris showed a marked increase in 2022. Hidradenitis suppurativa demonstrated an upward trend particularly in 2024 and 2025. While hair disorders exhibited a fluctuating pattern over the years, cutaneous malignancies displayed a relatively more stable distribution (Figure 1).

Percentage Distribution of Top 5 Dermatological Diseases (2020–2025)



**Figure 1:** Percentage distribution of the top 5 dermatological diseases (2020-2025)

The yearly distribution of the number of dermatology theses conducted between 2020 and 2025 is presented. An increase in the number of theses was observed between 2020 and 2022, followed by a slight decrease in 2023. A marked upward trend was noted in 2024 and especially in 2025. The highest number of theses was recorded in 2025 (Figure 2).



**Figure 2:** Number of the Dermatology theses by year (2020-2025)

## Discussion

In this study, the disease-based distribution of dermatology specialty theses completed between 2020 and 2025 was evaluated. Psoriasis was by far the most frequently studied disease, followed by acne vulgaris and cutaneous malignancies. Hair disorders, rosacea, and hidradenitis suppurativa were also addressed at notable rates, and an increasing interest in chronic inflammatory dermatoses was observed. In contrast, studies on vitiligo and those categorized under general dermatology remained relatively limited. Furthermore, the low number of artificial intelligence-based theses suggests that digital analysis and image processing in dermatology have not yet reached the desired level of academic prevalence.

The prominence of psoriasis, acne vulgaris, and cutaneous malignancies in thesis topics can be explained by their high prevalence and systemic implications. In particular, chronic inflammatory dermatoses such as psoriasis and hidradenitis suppurativa are regarded as systemic diseases associated with cardiometabolic risk, metabolic syndrome, and psychiatric comorbidities. Therefore, the frequent preference for biomarker analyses, inflammatory parameters, and treatment response studies at the thesis level is an expected finding. Similarly, acne vulgaris and hair disorders offer accessible and feasible research areas due to their high prevalence in the young patient population and their significant impact on quality of life.

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Bibliometric analyses conducted in the field of dermatology also demonstrate that inflammatory dermatoses and cutaneous malignancies are at the forefront in terms of research productivity (5–7). In recent years, the increasing number of publications on systemic inflammation, comorbidity associations, and targeted therapies has shaped research trends in favor of these diseases (6–8). The introduction of targeted biological agents (particularly IL-17 and IL-23 inhibitors) into clinical practice has encouraged investigations not only into clinical efficacy but also into their effects on systemic inflammatory parameters (9–11). In this context, the distribution of thesis topics appears to parallel the general research orientation observed in the global dermatology literature.

However, it is observed that a significant proportion of dermatology theses are concentrated within clinical and observational study designs. This trend may be associated with the ease of patient access and the feasibility of data collection processes. Analyses of research trends in dermatology also indicate that the majority of publications are clinically oriented, whereas translational and experimental studies remain relatively limited (12,13). This suggests a parallel between the methodological distribution of specialty theses and the general research trends in the literature.

On the other hand, in recent years, artificial intelligence– and machine learning–based approaches have shown a marked increase in the dermatology literature (14–15). In particular, studies focusing on dermoscopic image analysis and melanoma classification have reported high diagnostic accuracy rates (16). Nevertheless, it appears that this methodological transformation has only been reflected to a limited extent at the thesis level. This situation suggests that digital health and data science–based approaches may occupy a more prominent place in future dermatology research.

### **Limitations**

However, several limitations should be acknowledged. The analysis was based solely on data obtained from the national thesis database, and theses not publicly accessible may not have been included. Disease classification was performed according to thesis titles, which may not fully capture multi-disease or interdisciplinary study designs. Additionally, methodological quality, sample size, and publication outcomes of the theses were not evaluated.

Despite these limitations, the findings provide a structured overview of current research tendencies in dermatology training programs. Future theses incorporating translational research models, multicenter designs, and artificial intelligence–based analytical approaches may contribute to greater methodological diversity and scientific depth in dermatology research.

### **Conclusions**

This bibliometric analysis demonstrates that inflammatory dermatoses particularly psoriasis and acne vulgaris constitute the predominant focus of dermatology residency theses between 2020 and 2025. The prominence of these diseases appears to parallel global research trends, especially the growing emphasis on systemic

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inflammation, comorbid conditions, and targeted therapies. Skin malignancies and other chronic inflammatory disorders also maintained a consistent presence, reflecting their clinical burden and research relevance.

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**Ethical approval:** This study was conducted using publicly accessible data obtained from the Council of Higher Education (YÖK) National Thesis Center database. As the research did not involve human participants, direct patient contact, or identifiable personal data, formal ethical approval was not required. The institutional ethics committee reviewed the study framework and determined that ethical committee approval was not necessary for this type of analysis. The study was performed in accordance with principles of research transparency and data protection.

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**Data availability:** The data analyzed in this study are publicly available through the Council of Higher Education (YÖK) National Thesis Center database. Further details can be accessed directly via the official database platform.

**Contributions:**

Research concept and design: MSC, CC

Data analysis and interpretation: MSC, CC

Collection and/or assembly of data: MSC

Writing the article: MSC, CC

Critical revision of the article: MSC, CC

Final approval of the article: MSC, CC

All authors read and approved the final version of the manuscript.

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