

# Identification of unmet care needs, treatment preferences and health economic implications to optimize disease management outcomes in the field of chronic inflammatory skin diseases

Citation for published version (APA):

Willems, D. (2024). *Identification of unmet care needs, treatment preferences and health economic implications to optimize disease management outcomes in the field of chronic inflammatory skin diseases*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20240112dw>

## Document status and date:

Published: 01/01/2024

## DOI:

[10.26481/dis.20240112dw](https://doi.org/10.26481/dis.20240112dw)

## Document Version:

Publisher's PDF, also known as Version of record

## Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
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## Impact

### **Main objective and main results**

This dissertation explored the unmet care needs, treatments preferences and health economic implications in the field of chronic inflammatory skin disorders. The unmet care needs and preferences of patients and physicians in psoriasis were revealed to not be adequately addressed by available treatments options according to a systematic literature review conducted(1). The considerable differences of preferences in psoriasis highlighted the importance to make more diverse interventions available to allow individualization of patient care and improve disease management outcomes (chapter 2). In hidradenitis suppurativa, the limited published patient-centric research motivated the generation of novel insights on the unmet care needs and treatment preferences from the perspectives of patients and physicians in chapter 4(2). Important differences in perceptions of unmet care needs and treatment preferences were identified between patients and physicians and across geographies, possibly due to differences in care pathways or patient profiles (chapters 5 & 6). Unmet care needs and treatment preferences were revealed to be likely caused by low effectiveness of the few available treatment options which, leaving patients and physicians having to cope with uncontrolled flares, pain and disease progression(3,4). Two newly developed health economic models revealed under which health benefits and costs circumstances two treatment candidates for hidradenitis suppurativa and atopic dermatitis could be considered cost-effective to enable their future reimbursement to improve disease management outcomes in chapters 3 and 7(5,6).

### **Scientific impact**

The systematic literature review on treatment preferences of patients with psoriasis and physicians confirmed findings of previous reviews reporting efficacy to be the most influential treatment attribute for both patients and physicians in psoriasis. Detailed quality assessments using established checklists allowed the formulation of recommendations to strengthen the methodology of future evidence syntheses studies in psoriasis. Developing and correctly interpreting the results of an early economic evaluation in hidradenitis suppurativa required a critical appraisal of existing economic evaluations in hidradenitis suppurativa(5). The findings of this research added value to existing evidence by estimating the possible economic value of a treatment candidate for hidradenitis suppurativa that had not been appraised before. Furthermore, by exploring key drivers of cost-effectiveness, suggestions on which evidence and price levels future treatments for hidradenitis

suppurativa should expect to achieve favourable cost-effectiveness outcomes for reimbursement could be formulated.

The qualitative research using semi-structured interviews with patients with hidradenitis suppurativa and physicians in Europe and North-America increased the currently insufficient understanding of the unmet care needs and provided evidence for complementary quantitative preference research(2). The findings confirmed previous research reporting high levels of unmet care needs with pain, physical signs and HS-specific QoL as most apparent domains(7-9).

The findings of the interview study hidradenitis suppurativa subsequently served as basis for the first multi-national discrete-choice experiment questionnaire with patients in Europe aiming to investigate the most important treatment attributes(4). A similar discrete-choice experiment with hidradenitis suppurativa patients in the United States was conducted to explore the transferability of findings across geographies. The treatment preferences between patients enrolled in different discrete-choice experiments in Europe, Germany and the US were similar with patients consistently emphasizing effectiveness and pain control as most important with safety outcomes being less important(3,4,10).

Using a 'de novo' developed cost-effectiveness model in atopic dermatitis, the cost-effectiveness of a Janus Kinase inhibitor was explored under UK settings. Furthermore, the novel model structure addressed the shortcomings of previous models by incorporating three instead of one response endpoint to allow a more precise and realistic simulation of health and cost consequences of included treatments.

### **Social impact**

Health economics research informs policy-makers on the most efficient way to allocate the limited resources of a healthcare system. With policy-makers being payers, politicians, administrators, or clinicians, health economics has the potential to contribute to resource-efficient development-, regulatory- and reimbursement decisions to improve the disease management outcomes of chronic inflammatory skin diseases. In particular, designing future interventions that aim to address the unmet care needs and meet the preferences of patients may positively influence treatment satisfaction and adherence(11-13). The research of this dissemination presented a robust synthesis of available patient preference evidence in psoriasis, generated unprecedented qualitative and quantitative patient-centric research in hidradenitis suppurativa and explored the economic viability of two treatment candidates in hidradenitis suppurativa and atopic dermatitis. This research allows

## Impact

future healthcare decision-making to reduce the very high burden of disease and unmet care needs with more successful treatment options that match patients and physicians' preferences.

### **Dissemination of research results**

In addition to the publication of this dissemination, individual components of this thesis (chapters 2-7) were separately published in highly recognized peer-reviewed scientific journals(1-6). All manuscripts were published 'open access' to be accessible free of charge for patients, physicians and policy-makers. Each publication was further announced via social media channels to augment their awareness and impact.

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