Prevalence of Hidradenitis Suppurativa: A Meta-Analysis of Global Hidradenitis Suppurativa Atlas Studies

Dorra Bouazzi[1,2,3] MD, PhD, Sabrina M. Nielsen[3,4] PhD ,Paa G. Hagan[5,6] MD, Sofia Botvid [7,8] MD, Lone S. Hove MD [8], Errol P. Prens[9] Prof. , Klaudia Knecht-Gurwin[10] MD, Jacek C. Szepietowski [10] Prof. , Ehiaghe L. Anaba[11] MD, Ahmed S. Chehad[12] Prof, Samira Zobiri[13] Prof, Amina Serradj[14] Prof, Mohammed S. I. Bhuiyan[15] MD, Towhida Noor [16] MD, Philippe Guillem [17,18,19,20] MD, Phd, Mohammad M. Parvizi[21] MD, Nasrin Saki[22] Prof, Erkan Alpsoy[23] Prof, Caner Vardar[24] MD, Theodora Kanni [25]MD, Evangelos J. Giamarellos-Bourboulis[25] Prof., John W Frew[26, 27, 28] Prof, Waleed H. Ali A Maharbi[29] MD, Johanna C. van Huijstee[30] MD, Pim Aarts[30] MD, Shinta T. Dewi [31]MD, Sri A. Febriana [31]MD, Niken Indrastuti [31] MD, Nyoman Suryawati [32] MD, Miranti Pangastuti[33] MD, Aryani Adji[34] MD, Gardenia Akhyar [35] MD, Nopriyati [36] MD, Cut P. Hazlianda [37] MD, Francisco Reyes-Baraona[38] MD , Carlos Matas[38]MD, Haroon Saeed[39] MD, Ameshin Moodley[39] MD, Yousef Binamer[40] MD, Moonyza A. A. Kamil[41]MD, Ivana Jocic [42]MD, Zeljko Mijuskovic [42] Prof, Kanchana Mallawaarachchi[43] MD, Chathurika Gangani [44] MD, Ivana Tusheva [45] MD, Vesna B. Boshkovski[45] Prof, Hu Danchen[46] MD, Geng Songmei[46] Prof, Cecilia E. Medianfar[1,2] MD, Ditte M. L Saunte[1,2] Prof, Nisha. S. Chandran[47] MD, PhD, Hessel H. Van Der Zee[18,48] MD, PhD, Christos. C. Zouboulis[18,49] Prof, Farida Benhadou[18,50] Prof, Bente Villumsen[51], Afsaneh Alavi[18,52] Prof, Perpetua. U. Ibekwe[53] Prof, Iltefat H. Hamzavi[18,54] MD, John. R. Ingram[18,55] Prof., Haley B. Naik[18,56] MD, Amit Garg[18,57] Prof, Jurr Boer[58] MD, PhD, Robin Christensen[3,4] Prof, Gregor BE. Jemec[1,2,18] MD DMSc, GHiSA Group

1 1 PHOENIX Center, Department of Allergy, Dermatology and Venereology, Herlev-Gentofte Hospital, Gentofte, Denmark.

2 Department of Clinical Medicine, Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark.

3 Section for Biostatistics and Evidence-Based Research, the Parker Institute, Bispebjerg and Frederiksberg Hospital, Copenhagen, Denmark.

4 Research Unit of Rheumatology, Department of Clinical Research, University of Southern Denmark, Odense University Hospital, Denmark.

5 Department of Dermatology, Holy Family Hospital, Berekum, Ghana

6 Dermatology Unit, The Trust Hospital, Accra, Ghana

7 Department of Clinical Medicine, Faculty of Health Science, University of Copenhagen, Copenhagen, Denmark

8 Queen Ingrid's Health Care Center at Queen Ingrid's Hospital, Nuuk, Greenland

9 Erasmus University Medical Center, Department of Dermatology, Rotterdam, The Netherlands

10 Department of Dermatology, Venereology and Allergology, Wrocław Medical University, Wrocław, Poland

11 Lagos State University College of Medicine 1-5 Oba Akinjobi Way, Ikeja, Lagos, Nigeria

12 Department of dermatology, University-hospital of Constantine, Faculty of Medicine, Constantine-3 University, Algeria

13 Department of dermatology, Mustapha University Hospital Center, Faculty of Medicine, Alger-1 University, Algeria

14 Department of dermatology, University Hospital of Oran, Faculty of Medicine, Oran-1 University, Algeria

15 Department of Dermatology and Venereology, Bangabandhu Sheikh MujibMedical University (BSMMU), Dhaka, Bangladesh.

16 Metador Diagnostic and Wellness Center, Dhaka, Bangladesh

17 Department of Surgery, Clinique du Val d'Ouest, Lyon, France

18 European Hidradenitis Suppurativa Foundation, Dessau, Germany

19 Réso Verneuil, Paris, France

20 Groupe de Recherche en Proctologie de la Société Nationale Française de Coloproctologie, Paris, France

21 Molecular Dermatology Research Center, Shiraz University of Medical Sciences, Shiraz, Iran.

22 Department of Dermatology, Molecular Dermatology Research Center, Shiraz University of Medical Sciences, Shiraz, Iran

23 Department of Dermatology and Venereology Akdeniz University School of Medicine, Antalya, Türkiye

24 Department of Dermatology and Venereology, Akdeniz University School of Medicine, Antalya, Türkiye

25 4th Department of Internal Medicine, National and Kapodistrian University of Athens, Medical School, Athens, Greece

26 Laboratory of Translational Cutaneous Medicine, Ingham Institute for Applied Medical Science

27 Department of Dermatology, Liverpool Hospital, Sydney, Australia

28 School of Clinical Medicine, UNSW Medicine and Health, Sydney, Australia

29 Department of Dermatology, Sumail Hospital, Sumail, ALdakhiliya region , Oman

30 Erasmus University Medical Center, Department of Dermatology, Rotterdam, The Netherlands

31 Department of Dermatology and Venereology, Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada/Dr. Sardjito Central General Hospital, Yogyakarta, Indonesia

32 Department of Dermatology and Venereology, Faculty of Medicine Udayana University/Prof. Dr. I.G.N.G Ngoerah Central General Hospital, Denpasar, Bali, Indonesia

33 Department of Dermatology and Venereology, Faculty of Medicine, Universitas Padjadjaran/Dr. Hasan Sadikin Central General Hospital, Bandung, West Java, Indonesia

34 Department of Dermatology and Venereology, Faculty of Medicine, Sam Ratulangi University/Prof. Dr. R.D. Kandou Central General Hospital, Manado, North Sulawesi, Indonesia

35 Department of Dermatology and Venereology, Faculty of Medicine, Andalas University/Dr. M Djamil Central General Hospital, Padang, West Sumatra, Indonesia

36 Department of Dermatology, Venereology. And Aesthetics, Faculty of Medicine, Sriwijaya University/Dr. Mohammad Hoesin Central General Hospital, Palembang, South Sumatra, Indonesia

37 Department of Dermatology and Venereology, Faculty of Medicine Universitas Sumatra Utara /Universitas Sumatera Utara Hospital, Medan, North Sumatra, Indonesia

38 Department of Dermatology, Facultad de Medicina, Pontificia Universidad Católica de Chile, Santiago, Chile

39 Department of Dermatology, Nelson Mandela Medical School, KwaZulu-Natal, South Africa

40 Department of Dermatology, King Faisal Specialist Hospital & Research Center, and Alfaisal university, Riyadh, Saudi Arabia

41 Department of Dermatology, Hospital Kuala Lumpur, Malaysia

42 Department of Dermatology and Venereology, Faculty of Medicine, Military Medical Academy, Belgrade, Serbia

43 Department of Dermatology, Base Hospital – Balangoda, Sri Lanka

44 Department of Pediatrics, Base Hospital – Balangoda, Sri Lanka

45 Department of Dermatology, City General Hospital "8th September" Skopje, North Macedonia

46 Department of Dermatology, The Second Affilliated Hospital, Xi'an Jiaotong University, Xi'an, China

47 Division of Dermatology, Department of Medicine, National University Hospital, Singapore.

48 Erasmus University Medical Center, Department of Dermatology, Rotterdam, The Netherlands

49 Departments of Dermatology, Venereology, Allergology and Immunology, Staedtisches Klinikum Dessau, Brandenburg Medical School Theodor Fontane and Faculty of Health Sciences Brandenburg, Dessau, Germany

50 Hôpital Erasme HUB, Université Libre de Bruxelles, Belgium

51 Danish Hidradenitis Suppurativa Patients' Association, Denmark

52 Department of Dermatology, Mayo Clinic, Rochester, MN, USA

53 Dermatology unit, Department of Medicine, College of Health Sciences, University of Abuja, Abuja, Nigeria

54 Director of Hidradenitis suppurativa clinic, Multicultural Dermatology Center, Department of Dermatology, Henry Ford Hospital. Detroit, Michigan, USA.

55 Division of Infection and Immunity, Cardiff University, Cardiff, United Kingdom.

56 Department of Dermatology, University of California, San Francisco, USA

57 Department of Dermatology, Northwell Health, New Hyde Park, NY, USA

58 Deventer Hospital, Department of Dermatology, Deventer, The Netherlands

The Department of Dermatology, Zealand University Hospital, Roskilde, Denmark; the Department of Dermatology, Erasmus University Medical Center, Rotterdam, The Ntherlands; the Departments of Dermatology, Venereology, Allergology and Immunology, Staedtisches Klinikum Dessau, Dessau, Germany; and the Department of Dermatology, Université Libre de Bruxelles, Bruxells, Belgium are health care providers of the European Reference Network for Rare and Complex Skin Diseases (ERN Skin).

Running head: Prevalence of HS: Results from the first GHiSA study

Corresponding Author: Dr Dorra Bouazzi

Department of Dermatology, Zealand University Hospital, Roskilde, Denmark

Sygehusvej 10, DK- 4000, Roskilde, Denmark

Tel: +45 47322600

E-Mail: dob@regionsjaelland.dk

Orcid ID: https://orcid.org/0000-0002-8969-7144

Number of Tables: 1

Supplementary Tables: 2

Number of Figures: 1

Word count: 1182

Number of references:

Keywords: Hidradenitis Suppurativa, Prevalence, Epidemiology

Conflicts of interest:

The following authors report of no conflicts of interest: P.G. Hagan, S. Botvid, L. S. Hove, E.P. Prens, K. Knecht-Gurwin, J.C Szepietowski, E.L. Anaba, A.S Chehad, S. Zobiri, A. Serradj, M.S.I Bhuiyan, T. Noor, P. Guillem, M.M Parvizi, N. Saki, E. Alpsoy, C. Vardar, T. Kanni, W. H. A. A. Maharbi, J.C van Huijstee, P. Aarts, S. T. Dewi, S. A. Febriana, N. Indrastuti, N. Suryawati, M. Pangastuti, A. Adji, G. Akhyar, Nopriyati, C. P. Hazlianda, F. Reyes - Baraona, C. Matas, H. Saeed, A. Moodley, Y. Binamer, M. A. A. Kamil, Z. Mijuskovic, I Jocic, K. Mallawaarachchi, C. Gangani, I. Tusheva, V. B. Boshkovski, H. Danchen, G. Songmei, R. Christensen, F. Benhadou, C.E. Medianfar, H.H. van der Zee, B. Villumsen, P. U. Ibekwe, J. Boer,

D. Bouazzi has received teaching Honoria from UCB Nordic, UCB Nordic had paid for EADV congress participation 2022/2023.

E Giamarellos-Bourboulis has received honoraria from Abbott CH, bioMérieux, Brahms GmbH, GSK, InflaRx GmbH, Sobi and XBiotech Inc; independent educational grants from Abbott CH, AxisShield, bioMérieux Inc, InflaRx GmbH, Johnson & Johnson, MSD, Novartis, Sobi and XBiotech Inc.; and funding from the Horizon2020 Marie Skłodowska-Curie International Training Network “the European Sepsis Academy” (granted to the National and Kapodistrian University of Athens), and the Horizon 2020 European GrantsImmunoSep and RISCinCOVID (granted to the Hellenic Institute for the Study of Sepsis) and the Horizon Health grant EPIC-CROWN-2 (granted to the Hellenic Institute for the Study of Sepsis).

J.W. Frew has conducted advisory work for Janssen, Boehringer-Ingelheim, Pfizer, Kyowa Kirin, LEO Pharma, Regeneron, Chemocentryx, Abbvie, Azora, Novartis and UCB, participated in trials for Pfizer, UCB, Boehringer-Ingelheim, Eli Lilly, CSL, Azora and received research support from Ortho Dermatologics, Sun Pharma, LEO Pharma, UCB and La Roche Posay.

J. R. Ingram receives a stipend as Editor-in-Chief of the British Journal of Dermatology and an authorship honorarium from UpToDate. He is a consultant for Abbvie, Boehringer Ingelheim, ChemoCentryx, Citryll, MoonLake, Novartis, UCB Pharma, and UNION Therapeutics and has served on advisory boards for Insmed, Kymera Therapeutics, and Viela Bio. He is co-copyright holder of HiSQOL, Investigator Global Assessment and Patient Global Assessment instruments for HS. His department receives income from copyright of the Dermatology Life Quality Instrument (DLQI) and related instruments.

D.M.L. Saunte has received honoraria as a consultant for advisory board meetings by AbbVie, Janssen, Sanofi, LeoPharma, Novartis and as a speaker and/or received grants from the following companies: Abbvie, Janssen, Novartis, Sanofi, Jamjoom Pharma and Leo Pharma during the last 3 years

N. S. Chandran has received fees from AbbVie, Johnson & Johnson, Sanofi, DKSH, Pfizer and Galderma for participation in advisory boards, investigator fees for clinical trials from AbbVie, Novartis, Sanofi and Galderma, and speaker hono raria from Galderma, Johnson & Johnson, Leo pharma and Lion Corporation.

C.C. Zouboulis reports consultancy/advisory boards disease-relevant honoraria from AbbVie, Bayer, Incyte, InflaRx, Janssen-Cilag, Novartis, Regeneron and UCB. He has received speaker fees from AbbVie, Biogen and UCB; is President of the EHSF e.V., coordinator of the ALLOCATE Skin group of the ERN Skin and chair of the ARHS Task Force group of the EADV. He is Editor of the EADV News; is co-copyright holder of IHS4 on behalf of the EHSF e.V. His employer has received disease-relevant grants from AbbVie, Boehringer-Ingelheim, InflaRx, Novartis and UCB for his participation as clinical investigator.

A. Alavi has been consultant for Abbvie, BI, InflaRX, Janssen, Novartis , UCB and investigator for BI and Processa.

I. H. Hamzavi is an advisor for Abbvie. He has received grants/research funding from Pfizer, Bayer, Incyte, Estee Lauder, Ferndale Laboratories inc, Loreal, Unigen Inc, Arcutis, Avita for his role as an investigator. He has received fees from incyte, Pfizer, UCB, Boehringer Ingelheim, Galderma Laboratories, L.P. Novartis, Chemocentyx, Union and Sonoma Therapeutics for his role as a consultant or investigator. He is a board member and president of HS foundation, and the co-chair of Global Vitiligo Foundation. He has received equipment from Lenicura. He is a consultant and shareholder of MyDermPortal.

H.B. Naik has received grant support from AbbVie; consulting fees from 23andme, Abbvie, Aristea Therapeutics, Nimbus Therapeutics, Medscape and DAVA Oncology; advisory board fees from Boehringer Ingelheim and Novartis; and investigator fees from Pfizer. She is also an Associate Editor for JAMA Dermatology and an unpaid board member of the U.S. Hidradenitis Suppurativa Foundation.

A. Garg is an advisor for AbbVie, Aclaris Therapeutics, Anaptys Bio, Aristea Therapeutics, Boehringer Ingelheim, Bristol Myers Squibb, Incyte, InflaRx, Insmed, Janssen, Novartis, Pfizer, Sonoma Biotherapeutics, UCB, Union Therapeutics, and Viela Biosciences, and receives honoraria. A. Garg receives research grants from AbbVie, UCB,

National Psoriasis Foundation, and CHORD COUSIN Collaboration (C3). A. Garg receives research grants from Abbvie, UCB, and National Psoriasis Foundation. He is co-copyright holder of the HS-IGA and HiSQOL instruments. G.B.E. Jemec has received honoraria from AbbVie, Chemocentryx, Coloplast, Incyte, Inflarx, Novartis, Pierre Fabre and UCB for participation on advisory boards, and grants from Abbvie, Astra-Zeneca, Inflarx, Janssen-Cilag, Leo Pharma, Novartis, Regeneron and Sanofi, for participation as an investigator, and received speaker honoraria from AbbVie, Boehringer-Ingelheim, Galderma and MSD. He has also received unrestricted departmental grants from Abbvie, Leo Pharma and Novartis.

Key points

Question: What is the global prevalence of Hidradenitis Suppurativa, and how does it vary by age, sex, geographical location, BMI, smoking status, GDP, and HDI?

Findings: The sample included 22,743 participants, identifying 247 HS patients. The prevalence estimates showed considerable variations. The overall global prevalence of HS was 0.99% (95% CI 0.67 to 1.46%). Female sex was the only factor observed to be associated with HS prevalence.

Meaning*:* This study found significant global variation in HS prevalence, estimating it at ~1%. Further studies are needed to investigate the underlying causes of the substantial global variations in the HS prevalence.

ABSTRACT

Objective To estimate the global prevalence of Hidradenitis Suppurativa and study the differences in prevalence by age, sex, geographical location, Body Mass Index (BMI kg/m^2), smoking status, Gross Domestic Product (GDP), and Human Development Index (HDI).

Design: A proportional meta-analysis based on a series of prospectively planned, descriptive cross-sectional studies conducted as part of the Global Hidradenitis Suppurativa Atlas (GHiSA) Global Prevalence Study.

Setting: Multicenter study conducted across outpatient settings, excluding dermatology, in 23 countries spanning six continents.

Participants: A total of 22,743 healthy adults were recruited. Participants were screened using an HS-specific questionnaire, and those screening positive underwent examination by an HS-trained physician to confirm diagnosis. Approximately ten percent of the screen-negatives were also randomly selected for an examination to rule out disease. All studies conducted in accordance with the GHiSA method that had finalized the data collection prior to 05.19.2023 were included in the present proportional meta-analysis.

Main outcome and Measures: Pooled global prevalence of HS estimated using a random-effects model. Prevalence was analyzed in relation to contextual factors with a meta-regression.

Results: The sample included 22,743 participants, identifying 247 HS patients. While the prevalence estimates showed considerable inconsistency (I^2 >75%, τ^2 = 0.747), the overall random-effects global prevalence of HS was 0.99% (95% CI 0.67 to 1.46%). Female sex was the only factor observed to be associated with the prevalence estimates (% female, β =1.02 [95% CI: 1.01 to 1.03]).

Conclusions and Relevance: An estimated global prevalence between 0.7 and 1.5% surpasses previous global estimates. Substantial global variations in HS prevalence were observed. Female

sex was the only factor related to prevalence in our sample. Future studies assessing genetic, environmental, and etiological factors are warranted to explain the heterogeneity in prevalence.

Introduction

Hidradenitis Suppurativa (HS) is an inflammatory skin disease with a strong negative impact on patients' lives and largely no global epidemiological data. [1,2] HS is associated with increased mortality, singular psychosocial burden, and clinically important comorbidities [3-9]. While Jfri and colleagues [1] previously estimated HS prevalence, uncertanties remain due to study differences and limited global data. The Global Hidradenitis Suppurativa Atlas (GHiSA) has systematically gathered comparable HS prevalence data through the *Global Prevalence Study* (GPS). Our objective was to estimate the global HS prevalence across diverse populations and to analyze prevalence variations by age, sex, geographical location, Body Mass Index (BMI kg/m^2), smoking status, Gross Domestic Product (GDP), and Human Development Index (HDI).

Methods

This study is a proportional meta-analysis derived from GHiSA GPS, a series of cross-sectional studies based on the GHiSA methodology. [10] Briefly explained, healthy adults accompanying a patient receiving care at an outpatient setting, excluding dermatology, were invited to complete a screening questionnaire. [10,11] Participants who screened positive were examined by an HS-trained physician to verify the disease. Approximately ten percent of the screen negative participants were randomly selected to be examined to assess the diagnostic accuracy. Only studies following the GHiSA methodology that had finalized the data collection prior to 05.19.2023 were included. A separate ethical approval was not needed for this pooled analysis.

Various data were extracted from the relevant studies and included information on geographical location, risk factors (age, sex, median BMI, BMI >30, and smoking status), prevalence estimates (including 95% confidence intervals), and data on HDI [12] and GDP. [13]

An initial descriptive analysis was conducted. A random-effects model was applied to pool the prevalence estimates with 95% confidence intervals, due to the assumption that there was no true effect size. Heterogeneity between studies was assessed using both the I^2 statistic and τ^2. Additionally, 95% prediction intervals (PIs) were calculated. [14] By default, Wald-type CIs, based on a standard normal distribution, were calculated. The proportions were log-transformed using the logit method [15]. Finally, a meta-regression was applied to explore the association of various factors and any heterogeneity between the included countries. The statistical analyses were performed using the R software (version 4.2.2) with the package *metafor* [16].

Results

Out of the initial 74 countries invited to participate, a total of 51 countries were excluded due to lack of response (n=13), failure to initiate (n=12), obtain ethical approval (n=10), or finalize the study (n=14). Additionally, two countries were excluded for non-adherence to the study protocol. Finally, data from a total of 23 countries (n=25 studies), [17-41] spanning six continents, were included in this pooled analysis.

Study characteristics

This pooled analysis evaluated data from a cohort of 22,743 participants, of which 247 HS patients were identified. A summary of the study characteristics is presented in **Table 1**.

Prevalence

As illustrated in **Figure 1**, the overall random-effect pooled global prevalence of HS was 0.99% (95% CI 0.67 to 1.46; 25 studies). As anticipated, prevalence estimates showed considerable heterogeneity; I^2 >75%, τ^2 = 0.747 and 95% PI ranging from 0.18 – 5.39The prevalence estimates

ranged from 0.13% observed in the sample from Bangladesh [19] to 4.07% in the population from Saudi Arabia. [36] High prevalence estimates (pragmatically defined as those higher than 0.99%) were seen in eight countries (Figure 1).

Supplementary Table 1 offers a subgroup analysis by continent and region. No statistically significant difference in continent, region and prevalence were identified. Finally, a statistically significant association between sex (% female) and prevalence was identified (β =1.02, 1.01 to 1.03). No other significant associations between demographic/risk factors were found. The result of the full meta-regression can be found in **Supplementary Table 2.**

of HS increases by a factor 1.02 (i.e., 2%). See Table 3 for more information.

Discussion

Prospectively designed pooled prevalence studies have proven effective in minimizing the impact of measurement errors and biases. [42] The present analysis, carefully planned in advance and conducted through the GHiSA GPS initiative, presents the first and largest attempt to report of the global prevalence of HS. The findings reveal a global prevalence of 0.99% (95% 0.67, 1.46). The prevalence surpasses previous estimates (0.4%, 95% CI, 0.26, 0.63) reported by Jfri and colleagues [1], derived from a meta-analysis including studies from Western Europe, Scandinavia, The US, and Australia. The variance in these estimates was attributed to clinical and statistical heterogeneity across studies. Similarly, our analysis identified considerable heterogeneity within our sample; however, due to the consistent and distinct methodological approach employed through the GHiSA GPS, this variance doesn't necessarily imply inconsistency, but rather that the proportions or populations are different.

The subgroup analysis by continent and region found no statistically significant overall difference in prevalence. The subgroup analysis by continent and region found no statistically significant overall difference in prevalence. Most regions were only represented by one study, leading to

wide confidence intervals. Observed variations in prevalence across regions and continents has been found in other skin diseases such as eczema [43] and psoriasis. [44] These variations may be indicative of unidentified environmental and socioeconomic factors possibly influencing the prevalence patterns.

The meta-regression identified that only one variable, sex (% female) affected the prevalence. This aligns with current literature. [45,46] In contrast to prevailing literature, our study did not establish associations between BMI, BMI > 30, smoking and HS prevalence. [46-48] Disease severity was not assessed in this analysis and given that HS patients were identified among healthy adults, it is plausible that the majority exhibited mild disease. Additionally, our study focused solely on cigarette smoking and did not encompass other globally used tobacco alternatives. [49] Investigations into the association of BMI, tobacco alternatives, and disease severity are warranted.

Finally, no associations emerged between HS prevalence and HDI and GDP, potentially due to various factors, including the limitations of using these metrics alone, especially in regions with significant disparities in income distributions.

Limitations

The limitations of this study include the inherent constraints of large multi-center/country studies, including differences in language, culture, and healthcare systems, all potentially affecting the pooled prevalence estimate and its interpretation. Furthermore, selection bias needs to be considered, as a stratified sampling was not conducted. Additionally, countries were recruited via International League of Dermatological Societies member societies; only those that responded and had resources to participate were included, introducing potential non-response bias. As only 23 countries were included, a substantial amount of global data is therefore still missing. Moreover, ecological fallacy is possible for the meta-regressions exploring individual patient characteristics based on aggregated data. The strengths of this study include the rigorous and similar approach

employed to estimate the global prevalence of HS within the included studies. This study also successfully included numerous previously overlooked countries, and this review therefore provides the most robust and up-to-date global HS prevalence estimates available.

Conclusion

In conclusion, we estimated the global prevalence of HS to 0.99% (95% CI 0.67 1.46%). Proportion of female sex was the only factor that was associated with the prevalence. Substantial global variations in HS prevalence were observed. Further studies are needed to investigate the underlying causes of the substantial global variations in the HS prevalence.

Acknowledgments

Section for Biostatistics and Evidence-Based Research, the Parker Institute is grateful for the support provided by the Oak Foundation.

We further gratefully acknowledge the time and effort taken by the volunteers who participated in all the countries.

Funding

DB has been supported by a research gran by Region Sjælland – Medicinsporet.

Section for Biostatistics and Evidence-Based Research, the Parker Institute is supported by a core grant from the Oak Foundation (OCAY-18-774-OFIL).

References

1. Jfri A, Nassim D, O'Brien E, Gulliver W, Nikolakis G, Zouboulis CC. Prevalence of Hidradenitis Suppurativa: A Systematic Review and Meta-regression Analysis. *JAMA Dermatol*. Aug 1 2021;157(8):924-931. doi:10.1001/jamadermatol.2021.1677
2. Saunte DML, Jemec GBE. Hidradenitis Suppurativa: Advances in Diagnosis and Treatment. *Jama*. Nov 28 2017;318(20):2019-2032. doi:10.1001/jama.2017.16691
3. Reddy S, Strunk A, Garg A. All-cause mortality among patients with hidradenitis suppurativa: A population-based cohort study in the United States. *Journal of the American Academy of Dermatology*. 2019;81(4):937-942. doi:https://dx.doi.org/10.1016/j.jaad.2019.06.016
4. Rodriguez-Zuniga MJM, Garcia-Perdomo HA, Ortega-Loayza AG. Association Between Hidradenitis Suppurativa and Metabolic Syndrome: A Systematic Review and Meta-analysis. *Asociacion entre la hidradenitis supurativa y el sindrome metabolico: Revision sistematica y metaanalisis*. 2019;110(4):279-288. Comment in: Actas Dermosifiliogr (Engl Ed). 2019 May;110(4):259 PMID: 30797524 [https://www.ncbi.nlm.nih.gov/pubmed/30797524]. doi:https://dx.doi.org/10.1016/j.ad.2018.10.020
5. Miller IM, Ellervik C, Vinding GR, et al. Association of metabolic syndrome and hidradenitis suppurativa. *JAMA Dermatol*. Dec 2014;150(12):1273-80. doi:10.1001/jamadermatol.2014.1165
6. Cartron A, Driscoll MS. Comorbidities of hidradenitis suppurativa: A review of the literature. *Int J Womens Dermatol*. Dec 2019;5(5):330-334. doi:10.1016/j.ijwd.2019.06.026
7. Thorlacius L, Cohen AD, Gislason GH, Jemec GBE, Egeberg A. Increased Suicide Risk in Patients with Hidradenitis Suppurativa. *J Invest Dermatol*. Jan 2018;138(1):52-57. doi:10.1016/j.jid.2017.09.008
8. Patel KR, Lee HH, Rastogi S, et al. Association between hidradenitis suppurativa, depression, anxiety, and suicidality: A systematic review and meta-analysis. *Journal of the American Academy of Dermatology*. 2020;83(3):737-744. doi:https://dx.doi.org/10.1016/j.jaad.2019.11.068
9. Patel ZS, Hoffman LK, Buse DC, et al. Correction to: Pain, Psychological Comorbidities, Disability, and Impaired Quality of Life in Hidradenitis Suppurativa. *Current pain and headache reports*. 2017;21(12):52. Erratum for: Curr Pain Headache Rep. 2017 Nov 1;21(12):49 PMID: 29094219 [https://www.ncbi.nlm.nih.gov/pubmed/29094219]. doi:https://dx.doi.org/10.1007/s11916-017-0653-5
10. Bouazzi D, Andersen RK, Vinding GR, et al. The Global Hidradenitis Suppurativa Atlas (GHiSA) Methodology: Combining Global Proportions in a Pooled Analysis. *Dermatology*. Feb 14 2024;doi:10.1159/000536389
11. Vinding GR, Miller IM, Zarchi K, Ibler KS, Ellervik C, Jemec GB. The prevalence of inverse recurrent suppuration: a population-based study of possible hidradenitis suppurativa. *Br J Dermatol*. Apr 2014;170(4):884-9. doi:10.1111/bjd.12787
12. https://hdr.undp.org/data-center/country-insights#/ranks.
13. https://data.worldbank.org/indicator/NY.GDP.MKTP.CD. 01.08.2023
14. Higgins JP, Thompson SG, Deeks JJ, Altman DG. Measuring inconsistency in meta-analyses. *Bmj*. Sep 6 2003;327(7414):557-60. doi:10.1136/bmj.327.7414.557

15. Barker TH, Migliavaca CB, Stein C, et al. Conducting proportional meta-analysis in different types of systematic reviews: a guide for synthesisers of evidence. *BMC Med Res Methodol*. Sep 20 2021;21(1):189. doi:10.1186/s12874-021-01381-z
16. Viechtbauer W. Conducting Meta-Analyses in R with the metafor Package. *Journal of Statistical Software*. 08/05 2010;36(3):1 - 48. doi:10.18637/jss.v036.i03
17. Chehad AS, Zobiri, S., Bouazzi, D., Medianfar, C. E., Christensen, R., Jemec, G. B. E., & Serradj, A. . Hidradenitis suppurativa prevalence in Algeria: A multicenter cross-sectional study. Brief Report. *Dermatology*. 2024 Jun 1.;doi: 10.1159/000539599. Epub ahead of print. PMID: 39397636.
18. Pham J, Flora, A., Kozera, E. K., Medianfar, C. E., Bouazzi, D., Christensen, R., Jemec, G. B. E., & Frew, J. W. Diagnostic Accuracy of a Questionnaire Screening Test in Assessing the Prevalence of Hidradenitis Suppurativa in Sydney, Australia. Brief Report. *Dermatology*. 2024;IN PRESS. DOI: 10.1159/000540455
19. Islam MS, Noor, T., Akhter, S., Tahnin, N.-A.-T., Bouazzi, D., Medianfar, C. E., Christensen, R., & Jemec, G. B. E. Prevalence of Hidradenitis Suppurativa in Dhaka, Bangladesh: A hospital-based study. Brief Report. *Dermatology*. (2024);IN PRESS. DOI: 10.1159/000538444.doi:10.1159/000538444
20. Reyes-Baraona F, Matas, C., Bouazzi, D., Medianfar, C. E., Christensen, R., & Jemec, G. B. E. Hidradenitis suppurativa prevalence in Santiago, Chile. Brief Report. *Dermatology*. (2024);IN PRESS. DOI: 10.1159/000538423
21. Hu D, Bouazzi, D., Medianfar, C. E., Christensen, R., Jemec, G. B. E., & Geng, S. . Prevalence of Hidradenitis Suppurativa in Xi'an, China: A Single Center Epidemiological Study. Brief Report. *Dermatology*. (2024);IN PRESS. DOI: 10.1159/000539019
22. Guillem P, Vlaeminck-Guillem, V., Beuque-Leveque, M., Chavrier, C., Clerbout, M., Enault, C., Evain, I., Fioretta, M., Gadat, A.-S., Gaspard, S., Math, S., Jemec, G. B. E., & Bouazzi, D. Prevalence of Hidradenitis Suppurativa in Lyon: Results from the French Team of the Global Hidradenitis Suppurativa Atlas Project. Brief Report. *Dermatology, IN PRESS, DOI: 101159/000542671*. (2024);
23. Hagan PG, Bouazzi D, Nyarko G, et al. Prevalence of Hidradenitis Suppurativa in Berekum, Ghana. *Br J Dermatol*. Mar 8 2022;doi:10.1111/bjd.21234
24. Hagan PG, Kjærsgaard Andersen R, Seldam IT, et al. Hidradenitis suppurativa prevalence in Berekum, Ghana: A cross-sectional study and initial validation of a questionnaire in an African setting. *JAAD Int*. Jul 2020;1(1):1-2. doi:10.1016/j.jdin.2020.02.001
25. Kanni T, Ktena, S., Leventogiannis, K., Damoulari, C., Bouazzi, D., Medianfar, C. E., Christensen, R., Jemec, G. B. E., & Giamarellos-Bourboulis, E. J. Prevalence of hidradenitis suppurativa in Athens, Greece: A cross-sectional study based on a validated questionnaire. Biref Report. *Dermatology*. (2024);IN PRESS. 10.1159/000539758
26. Botvid SHC, Storgaard Hove L, Bouazzi D, et al. Hidradenitis Suppurativa Prevalence in Nuuk, Greenland: Physician Validation of a Hidradenitis Suppurativa Questionnaire in a Greenlandic Setting. *Acta Derm Venereol*. Jan 10 2023;103:adv00847. doi:10.2340/actadv.v103.4410
27. Febriana SA, Dewi, S. T., Indrastuti, N., Suryawati, N., Pangastuti, M., Adji, A., Akhyar, G., Nopriyati, N., Hazlianda, C. P., Bouazzi, D., Medianfar, C. E., Christensen, R., & Jemec, G. B. E. . Hidradenitis suppurativa prevalence in Indonesia: A cross-sectional multicenter study and

validation of a screening questionnaire. Brief Report. *Dermatology*. (2024);IN PRESS. DOI: 10.1159/000539705
28. Handjani F, Saki, N., Parvizi, M. M., Radanfar, R., Bouazzi, D., Medianfar, C. E., Christensen, R., & Jemec, G. B. E. Prevalence of hidradenitis suppurativa in Fars province, Iran. Brief Report. *Dermatology* (2024);IN PRESS. DOI: 10.1159/000540422
29. Akmal Ahmad Kamil M, Abdul Rahim, A., Bouazzi, D., Medianfar, C. E., Christensen, R., & Jemec, G. B. E. . Prevalence of Hidradenitis Suppurativa in Hospital Kuala Lumpur, Malaysia: A Cross Sectional Study. Brief Report. *Dermatology*. (2024);IN PRESS. DOI: 10.1159/000539397
30. Anaba EL, Bouazzi D, Ajayi PV, Aro OO, Boer J, Jemec GBE. Prevalence of Hidradenitis Suppurativa in an African Population: Validation of a Screening Questionnaire in Lagos, Nigeria. *Dermatology*. 2023;239(5):832-835. doi:10.1159/000531561
31. Ibekwe P. U. B, D., Medianfar, C. E., Christensen, R., & Jemec, G. B. E. Prevalence of Hidradenitis suppurativa among healthy adults in Abuja, Nigeria. Brief Report. *Dermatology*. (2024);IN PRESS. DOI: 10.1159/000539443
32. Tusheva I, Brishkoska Boshkovski, V., Bouazzi, D., Medianfar, C. E., Christensen, R., Jemec, G. B. E., Trajkova, V., Dimitrovska, I., Ristovska-Dimitrovska, A., & Damevska, K. Prevalence of Hidradenitis Suppurativa in Skopje, North Macedonia. Brief Report. *Dermatology*. (2024);IN PRESS. DOI: 10.1159/000539140
33. AL Maharbi WHA, Andersen, P. L., Bouazzi, D., Medianfar, C. E., Christensen, R., & Jemec, G. B. E. . Prevalence of Hidradenitis Suppurativa in Oman. Brief Report. *Dermatology*. (2024);IN PRESS. DOI: 10.1159/000540156
34. Zorge NE, van Huijstee, J. C., Dijkema, J. S., Bouazzi, D., Medianfar, C. E., Christensen, R., Jemec, G. B. E., Prens, E. P., & van der Zee, H. H. . Prevalence of Hidradenitis Suppurativa in the Gulf Province of Papua New Guinea. Brief Report. *Dermatology*. (2024);IN PRESS. DOI: 10.1159/000538422
35. Knecht-Gurwin K, Gurwin, A., Wróbel, T., Bouazzi, D., Medianfar, C. E., Christensen, R., Jemec, G. B. E., Szepietowski, J. C., & Matusiak, L. Prevalence of hidradenitis suppurativa in Poland. Brief Report. *Dermatology*. (2024);IN PRESS. DOI: 10.1159/000541951
36. Binamer Y, Samman, O., aldabbagh, A., Boushi, J., Bouazzi, D., Medianfar, C. E., Christensen, R., & Jemec, G. B. E. Prevalence of Hidradenitis Suppurative in Saudi Arabia. Brief Report. *Dermatology*. (2024);IN PRESS. DOI: 10.1159/000538727
37. Jocic I, Dujovic, B., Kandolf, L., Bouazzi, D., Medianfar, C. E., Christensen, R., Jemec, G. B. E., & Mijuskovic, Z. Prevalence of hidradenitis suppurativa in Serbia: Validation of a Screening Questionnaire. Brief Report. *Dermatology*. (2024);IN PRESS. DOI: 10.1159/000539877
38. Saaed H, Bouazzi, D., Jemec, G. B. E., Medianfar, C. E., Moodley, A., & Mosam, A. Prevalence of Hidradenitis Suppurative in Durban, KwaZulu Natal South Africa. Brief Report. *Dermatology, IN PRESS, DOI: 101159/000543025*. (2024);
39. Mallawaarachchi KV, Gangani, C., Bouazzi, D., Medianfar, C. E., Christensen, R., & Jemec, G. B. E. . Prevalence of Hidradenitis Suppurativa in Balangoda, Sri Lanka. Brief Report. *Dermatology, IN PRESS, DOI: 101159/000539336*. (2024);
40. van Huijstee JC, van Straalen, K. R., Bouazzi, D., Medianfar, C. E., Jemec, G. B. E., Christensen, R., Aarts, P., Mangal, R. A., Erdal, B., Geraedts, N. C. T., Prens, E. P., & van der Zee, H. H. . Prevalence of hidradenitis suppurativa in The Netherlands, a cross sectional study as part of the Global Hidradenitis Suppurativa Atlas (GHiSA). Brief Report. *Dermatology, IN PRESS, DOI: 101159/000542816*. (2024);

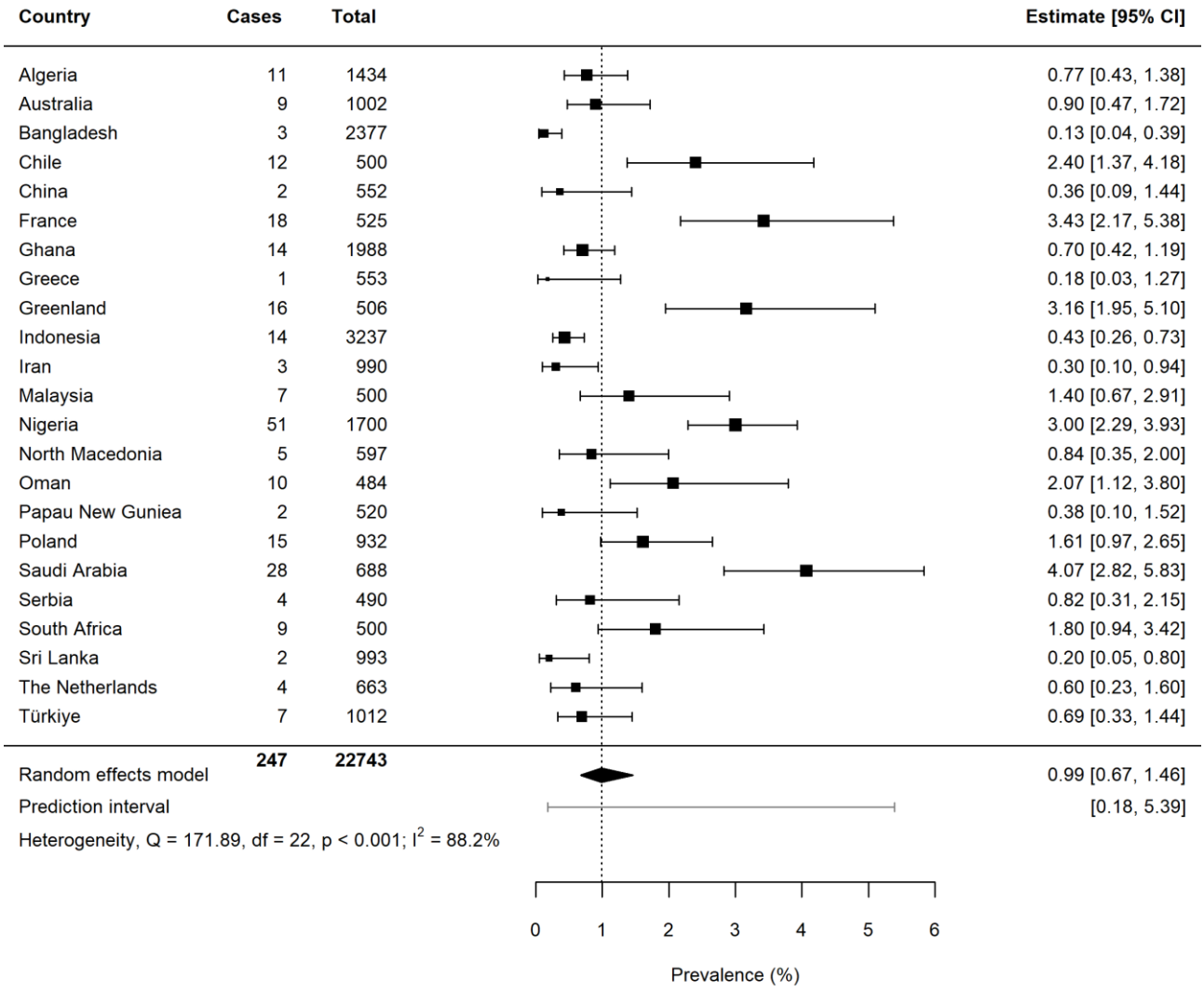
41. Alpsoy E, Akanlar, S., Nagiyev, S., Bouazzi, D., Vardar, C., Yilmaz, O., Christensen, R., & Jemec, G. B. E. Prevalence of Hidradenitis Suppurativa in Antalya, Turkey. Brief Report. *Dermatology, IN PRESS, DOI: 101159/000542480*. (2024);
42. Friedenreich CM. Commentary: improving pooled analyses in epidemiology. *Int J Epidemiol*. Feb 2002;31(1):86-7. doi:10.1093/ije/31.1.86
43. Mallol J, Crane J, von Mutius E, Odhiambo J, Keil U, Stewart A. The International Study of Asthma and Allergies in Childhood (ISAAC) Phase Three: a global synthesis. *Allergol Immunopathol (Madr)*. Mar-Apr 2013;41(2):73-85. doi:10.1016/j.aller.2012.03.001
44. Parisi R, Iskandar IYK, Kontopantelis E, Augustin M, Griffiths CEM, Ashcroft DM. National, regional, and worldwide epidemiology of psoriasis: systematic analysis and modelling study. *Bmj*. May 28 2020;369:m1590. doi:10.1136/bmj.m1590
45. Ingram JR. The epidemiology of hidradenitis suppurativa. *Br J Dermatol*. Dec 2020;183(6):990-998. doi:10.1111/bjd.19435
46. Chu CB, Yang CC, Tsai SJ. Global data analysis supports smoking as the fundamental element associated with geographical sex disparities in hidradenitis suppurativa. *Br J Dermatol*. Nov 2021;185(5):1054-1056. doi:10.1111/bjd.20581
47. Wright S, Strunk A, Garg A. Trends in body mass index before and after diagnosis of hidradenitis suppurativa. *The British journal of dermatology*. 2021;185(1):74-79. Comment in: Br J Dermatol. 2021 Jul;185(1):6-7 PMID: 33755195 [https://www.ncbi.nlm.nih.gov/pubmed/33755195]. doi:https://dx.doi.org/10.1111/bjd.19713
48. Kaleta KP, Nikolakis G, Hossini AM, et al. Metabolic Disorders/Obesity Is a Primary Risk Factor in Hidradenitis Suppurativa: An Immunohistochemical Real-World Approach. *Dermatology (Basel, Switzerland)*. 2022;238(2):251-259. doi:https://dx.doi.org/10.1159/000517017
49. Medianfar CE, Jemec GBE. Global differences in Tobacco Use: Who is using what? *Br J Dermatol*. Sep 28 2023;doi:10.1093/bjd/ljad379

580
581 **Table I:** Study characteristics of Hidradenitis Suppurativa (HS) patients globally
582

Country	Continent	Region	Cases with HS (n)	Total screened (n)	Prevalence* [95% CI]	Female (%)	Age in years	Median BMI**	BMI >30** (%)	Smoking (%)	GDP*** ($)	HDI ****
Algeria [17]	Africa	Northern Africa	11	1,434	0.77 [0.43 to 1.37]	90.9	34.0	26.2	18.2	0.0	163,044.44	0.745
Australia [18]	Oceania	Australia/New Zealand	9	1,002	0.90 [0.50 to 1.70]	66.7	30.0	41.8	100.0	44.4	1,552,667.36	0.951
Bangladesh [19]	Asia	Southern Asia	3	2,377	0.13 [0.04 to 0.37]	0.0	45.0	28.0	0.0	-	416,264.94	0.661
Chile [20]	Latin America and the Caribbean	South America	12	500	2.40 [1.40 to 4.10]	100.0	35.5	30.9	58.3	25.0	317,058.51	0.855
China [21]	Asia	Eastern Asia	2	552	0.36 [0.10 to 1.31]	50.0	28.5	26.1	0.0	50.0	17,734,062.65	0.768
France [22]	Europe	Western Europe	18	525	3.43 [2.20 to 5.40]	55.6	36.0	24.1	16.7	44.4	2,957,879.76	0.903
Ghana [23,24]	Africa	Western Africa	14	1,988	0.70 [0.42 to 1.20]	64.3	34.0	27.2	35.7	0.0	77,594.28	0.632
Greece [25]	Europe	Southern Europe	1	553	0.18 [0.03 - 1.02]	0.0	51.0	32.6	100.0	0.0	214,873.88	0.887
Greenland [26]	Northern America	Northern America	16	506	3.16 [1.95 to 5.10]	87.5	40.5	29.1	43.8	93.8	3,076.02	-
Indonesia [27]	Asia	South-Eastern Asia	14	3,237	0.43 [0.26 - 0.72]	50.0	29.0	23.0	7.1	28.6	1,186,092.99	0.705
Iran [28]	Asia	Southern Asia	3	990	0.30 [0.10 to 0.89]	33.3	28.0	27.2	33.3	-	359,713.15	0.774
Malaysia [29]	Asia	South-Eastern Asia	7	500	1.40 [0.68 to 2.90]	42.9	33.0	23.5	0.0	14.3	372,980.96	0.803
Nigeria [30,31]	Africa	Western Africa	51	1,700	3.00 [2.30 to 3.90]	66.7	33.0	26.6	25.5	3.9	440,833.58	0.535
North Macedonia [32]	Europe	Southern Europe	5	597	0.84 [0.36 to 1.95]	40.0	36.0	28.1	40.0	60.0	13,825.05	0.770
Oman [33]	Asia	Western Asia	10	484	2.07 [1.10 to 3.80]	80.0	29.5	26.9	10.0	20.0	88,191.98	0.816
Papua New Guinea [34]	Oceania	Melanesia	2	520	0.38 [0.11 to 1.40]	0.0	23.5	24.0	0.0	50.0	26,594.31	0.558
Poland [35]	Europe	Eastern Europe	15	932	1.61 [0.90 to 2.50]	33.3	38.0	28.7	33.3	-	679,444.83	0.876
Saudi Arabia [36]	Asia	Western Asia	28	688	4.07 [2.83 to 5.82]	60.7	34.5	27.4	35.7	7.1	833,541.24	0.875
Serbia [37]	Europe	Southern Europe	4	490	0.82 [0.32 - 2.10]	50.0	40.5	25.7	25.0	75.0	63,082.05	0.802
South Africa [38]	Africa	Southern Africa	9	500	1.80 [0.95 to 3.40]	88.9	36.0	27.3	22.2	33.3	419,015.02	0.713
Sri Lanka [39]	Asia	Southern Asia	2	993	0.20 [0.06 to 0.73]	50.0	26.5	29.4	0.0	50.0	88,927.26	0.782
The Netherlands [40]	Europe	Western Europe	4	663	0.60 [0.32 to 1.54]	100.0	41.0	28.2	25.0	75.0	1,012,846.76	0.941
Türkiye [41]	Asia	Western Asia	7	1,012	0.69 [0.33 to 1.40]	57.1	44.0	25.8	14.3	57.9	819,035.18	0.838

583
584 Baseline characteristics of identified HS patients, (n=247). The table includes patient characteristics
585 of patients from 23 countries. *Percent ** Body Mass Index (kg/m2), ***Gross Domestic Product
586 (GDP) per capita, denominated in US dollars (figures from 2021) (71), **** Human Development
587 Index (HDI): Human Development Reports 2021/2022 (72), n= numbers.
588

Figure I: Global prevalence of Hidradenitis Suppurativa. Forest plot from a meta-analysis of GHiSA studies reporting of prevalence of Hidradenitis Suppurativa (back-converted from logits)



Forest plot (back converted from logits) illustrating the random-effects and fixed effect-model derived from a comprehensive meta-analysis of GHiSA studies reporting a prevalence of HS. The plot includes the summary measure, offering a precise representation of the pooled results. A total of 23 countries were included. CI: confidence interval ([prediction intervals], I2 index: percentage of variability not attributed to sampling error.

Supplementary Table 1: Subgroup analysis of geographical location and prevalence of HS

Characteristics	Geographical distribution*	Estimate (95%CI)	τ^2	I^2 (%)	p-value	Prediction intervals
Overall (n=23)		0.99 (0.67–1.46)	0.747	88.2	-	0.18 – 5.39
Continent (n=23)			0.801	87.2	0.474	
Africa	4 (17.4)	1.33 (0.54–3.25)				0.19 – 8.86
Asia	9 (39.1)	0.68 (0.36-1.31)				0.11 – 4.30
Europe	6 (26.1)	1.04 (0.46–2.31)				0.15 – 6.76
Latin America and the Caribbean	1 (4.3)	2.40 (0.39–13.47)				0.19 – 23.87
Northern America	1 (4.3)	3.16 (0.52–16.82)				0.26 – 29.07
Oceania	2 (8.8)	0.63 (0.15–2.61)				0.07 – 5.80
Region (n=23)			0.619	83.2	0.171	
Australia/New Zealand	1 (4.3)	0.90 (0.17–4.62)				0.09 – 8.12
Eastern Asia	1 (4.3)	0.36 (0.05–2.82)				0.03 – 4.60
Eastern Europe	1 (4.3)	1.61 (0.32–7.67)				0.17 – 13.32
Melanesia	1 (4.3)	0.38 (0.05–2.98)				0.03 – 4.88
Northern Africa	1 (4.3)	0.77 (0.15–3.88)				0.08 – 6.90
Northern America	1 (4.3)	3.16 (0.64–14.17)				0.35 – 23.43
South-Eastern Asia	2 (8.7)	0.76 (0.23–2.42)				0.11 – 5.05
South America	1 (4.3)	2.40 (0.47–11.30)				0.26 – 19.00
Southern Africa	1 (4.3)	1.80 (0.34–8.93)				0.19– 15.18
Southern Asia	3 (13.0)	0.20 (0.06–0.61)				0.03 – 1.32
Southern Europe	3 (13.0)	0.60 (0.20–1.86)				0.09 – 3.96
Western Africa	2 (8.7)	1.50 (0.49–4.50)				0.22 – 9.35
Western Asia	3 (13.0)	1.89 (0.74–4.76)				0.31 – 10.55
Western Europe	2 (8.7)	1.61 (0.49–5.21)				0.23 – 10.43

A subgroup analysis showcasing the prevalence of HS across various geographical locations. The table includes τ2, I2, and prediction intervals, providing insights into the in-between study variance and variability in effect sizes due to heterogeneity. p-values illustrating any significant difference between prevalence in various regions are also included. *Data are no (%) of included countries pr continent/region. CI: confidence interval.

Supplementary Table 2: Meta-regression of sociodemographic/risk factors and prevalence of HS

Characteristics	No of studies	Summary*	Estimate (95%CI)	τ^2	I^2 (%)	p-value
Female, % (range)	23	55.6 (0.0–100.0)	β 1.02 (1.01 to 1.03)	0.549	84.7	**0.0034**
Age in years, median (range)	23	34.5 (29.8–39.3)	β 1.00 (0.93 to 1.07)	0.786	88.8	0.9899
BMI median	23	27.2 (26.0–28.5)	β 0.99 (0.89 to 1.10)	0.795	88.9	0.8905
BMI > 30, %	23	25.0 (0.0–100.0)	β 1.01 (0.99 to 1.02)	0.753	88.4	0.4437
Current smoking, % (range)	20	38.9 (0.0–93.8)	β 1.00 (0.98 to 1.01)	0.648	86.7	0.6661
GDP ** (US $ millions) 2021	23	372981 (88560–826288)	β 1.00 (1.00 to 1.00)	0.765	88.7	0.5160
HDI 2021	22	0.792 (0.721–0.870)	β 5.01(0.14 to 183.51)	0.736	86.4	0.3800

A meta-regression analysis illustrating the relationship between the prevalence of Hidradenitis Suppurativa (HS) and various demographic and risk factors. The estimate β indicates the proportional increase (or decrease) in odds of having HS pr one-unit increase in the sample. For % females, 1 unit increase in the proportion of females in the sample, indicates that the prevalence of HS increases by a factor 1.02, i.e. 2%. *Data are median percentages (range of percentages), or medians (range of medians) for aggregated data. BMI: Body Mass Index (kg/m2) GDP: Gross Domestic Product in US $ (millions), HDI: Human Development Index