REVIEW ARTICLE

Exploring the Impact of Fatigue and Sleep Disturbance in Hidradenitis Suppurativa: Perspectives from Patients and Healthcare Professionals

Barry M. MCGRATH[1], Donna ATHERTON[2], Phil BRADY[3], Marie-France BRU-DAPRÉS[4], Jennifer L. HSIAO[5], Silvia LOBO[6], Latoya PALMER[7], Giuseppina PINTORI[8], Jacek C. SZEPIETOWSKI[9,10], Mei GO[11], Ivette ALARCON[11] and John R. INGRAM[12]

[1]HS Ireland – Hidradenitis Suppurativa Association, Gortatogher, Ireland, [2]International Association of Hidradenitis Suppurativa Network, Boston, MA, United States, [3]British Skin Foundation, London, United Kingdom, [4]Association Française pour la Recherche sur l'Hidrosadénite, Saint-Benoît, France, [5]Department of Dermatology, Keck Medicine of University of Southern California, Los Angeles, CA, United States, [6]Asociación de Enfermos de Hidrosadenitis – ASENDHI, Madrid, Spain, [7]Hidradenitis and Me Support Group, Brampton, Ontario, Canada, [8]Passion People, Cagliari, Italy, [9]Division of Dermatology, Venereology and Clinical Immunology, Faculty of Medicine, Wroclaw University of Science and Technology, Wroclaw, Poland, [10]Department of Dermato-Venereology, 4th Military Hospital, Wroclaw, Poland, [11]Novartis Pharma AG, Basel, Switzerland, and [12]Department of Dermatology & Academic Wound Healing, Division of Infection and Immunity, Cardiff University, Cardiff, United Kingdom

Hidradenitis suppurativa (HS) is a chronic inflammatory skin disease that affects physical, social and emotional aspects of life for people living with HS (plwHS). Although many plwHS consider pain the most bothersome symptom, fatigue and sleep disturbance are underexplored in research and rarely discussed in clinical practice. This article shares perspectives from plwHS and people working with patients, including healthcare professionals (HCPs), from Europe and North America, on the impact of HS-related fatigue and sleep disturbance on quality of life (QoL). Fatigue was described as a debilitating symptom affecting QoL, with HCPs often noting that plwHS were unaware of the full impact of fatigue until treatment improved their HS symptoms. Sleep disturbance was mainly attributed to HS-related pain, pruritus and lesion drainage, with sleep deficits accumulating over time. The strain of HS impacted personal relationships, with plwHS expressing less interest in social interactions or intimate relationships, leading to feelings of guilt, failure, isolation and reduced self-esteem. Fatigue and sleep disturbance also affected work productivity, and consequently, career progression and financial stability. Recognizing the multifaceted HS symptoms, providing reasonable adjustments in the workplace, encouraging open dialogue with HCPs and measuring fatigue with a validated instrument could help improve QoL of plwHS.

Key words: Disease burden; Fatigue; Hidradenitis suppurativa; Patients; Quality of life; Sleep disturbance.

Submitted Nov 12, 2025. Accepted after revision Mar 17, 2026

Published Apr 16, 2026.
DOI: 10.2340/actadv.v106.adv-2025-0179

Acta Derm Venereol 2026; 106: adv-2025-0179.

Corr: Barry M. McGrath, HS Ireland – Hidradenitis Suppurativa Association, Gortatogher, Parteen, County Clare, V94 D2W5, Ireland. *Email: barry@hsireland.ie

Significance

The patient and healthcare professional perspectives presented in this manuscript provide insights into the different domains of fatigue that patients experience and how fatigue and sleep disturbance can profoundly affect daily functioning, relationships and work productivity, creating a cycle of physical and emotional exhaustion. This manuscript also highlights strategies that could help improve the QoL of people living with HS, such as recognition of the multifaceted HS symptoms, provision of reasonable adjustments in the workplace, encouraging open dialogue with HCPs and measuring fatigue with a validated instrument.

Hidradenitis suppurativa (HS) is a chronic, painful inflammatory skin disease that affects physical, social and emotional aspects of patients' lives (1, 2). Historically, outcome measures have relied on lesion count; however, this does not fully represent the severity and extent of HS symptoms (3). Regardless of disease severity, HS can lead to stigmatization, contributing to isolation and feelings of anxiety and depression (4–6). Consequently, HS can decrease work ability and productivity, leading to potential loss of income or lack of interest in career progression (7). HS can also harm relationships, including with partners, family and friends. In addition, HS can affect socializing, going out in public and participating in hobbies and other recreational activities (8).

Although pain is the most bothersome symptom for most people living with HS (plwHS) (9, 10), fatigue and sleep disturbance are commonplace, underexplored in research and rarely discussed in clinical practice (11, 12). The Hidradenitis Suppurativa Core Outcomes Set International Collaboration (HiSTORIC) identified fatigue as one of the three most important HS symptoms, along with pain and drainage (13). The domains of fatigue (14) affected by HS include general, physical, mental, reduced motivation and reduced activity (11). HS-associated pain and pruritus have also been shown to correlate with insomnia and sleep quality (4). Patient advocates across Europe and North America ranked pain, fatigue and sleep as priority themes for additional evidence generation to support plwHS. Fatigue and sleep disturbance are widely recognized in other immune-mediated diseases, e.g., fatigue in axial spondyloarthritis and sleep disturbance in urticaria and atopic dermatitis (15–20). There are also calls for better education and holistic management of HS, including measuring fatigue with a validated instrument, to help improve the quality of life (QoL) of plwHS (4, 21, 22). After a meeting to discuss the key questions and topics for this article, the 12 authors, which comprise plwHS and representatives of patient organizations (n = 7) and HCPs from Europe and North America (n = 3), provided their opinions and perspectives regarding key themes of HS-related fatigue and sleep disturbance and their impact on QoL via standardized forms and during manuscript development.

HS-related fatigue

Fatigue was described as a debilitating symptom affecting QoL, emphasizing the intensity beyond physical tiredness to extreme exhaustion.

[Fatigue], for me, is like a silent traveling companion who accompanies my every step. It is not just a limit, but a presence that I feel deeply, as if it were walking alongside me. – Person living with HS

PlwHS attributed fatigue to the physical, mental and emotional demands of living with HS, including direct (e.g. pain) and indirect (e.g. sleep disturbance due to discomfort) symptoms and interventions (e.g. self-care routines; **Fig. 1**). PlwHS commented that their fatigue worsened in the days following execution of routine tasks that people without HS likely take for granted. HCPs noted that patients were often unaware of the full impact of fatigue until HS treatment improved their symptoms. PlwHS recognized the general, all-encompassing fatigue that appears ever-present, describing fatigue as “a background weariness that never fully goes away.”

Beyond general fatigue, individuals identified different facets associated with the physical, mental, reduced motivation and reduced activity domains of fatigue, which are interlinked in a complex manner. HCPs also commented that patients experienced all domains of fatigue, which affected all aspects of QoL (e.g. accentuated symptoms, affected mood, reduced enjoyment and ability to engage in recreational activities).

Physical fatigue. Physical fatigue appears to be the main facet of fatigue that affects plwHS, making it difficult to perform daily activities, and at times, leaving them feeling unable to walk or move because of pain.

Mental fatigue. PlwHS noted that engaging in conversations can become overwhelming, concentration can be diminished, memory and decision-making can be impaired, and simple tasks often take a longer time to complete. Fatigue can also make individuals irritable.

Reduced motivation. HS can bring about waves of frustration, isolation and hopelessness, with plwHS finding it challenging to start activities they once enjoyed prior to the onset of disease. This can compound feelings of self-loathing, as plwHS often compare themselves with others who are unaffected by HS. One individual highlighted the importance of their work in helping them pursue goals and maintain motivation in their everyday life.

Reduced activity. HS can limit daily activities, including exercise, due to discomfort, lesion drainage and lack of energy. PlwHS may also feel the need to conserve energy by limiting their engagement in social/physical activities.

Individuals highlighted that fatigue associated with a flare-up can compound general feelings of fatigue. The flare process can take its toll on plwHS; even after resolution of a flare (i.e. abscess rupture; relief from pain; and subsequent drainage, odour and pruritus), general fatigue can persist for days. PlwHS further described the wider impact of fatigue on their QoL, which can limit their independence, enjoyment and ability to fully engage with the world. They described the impact as creating an ongoing cycle that made it more difficult for them to manage their health and enjoy things they love or be fully present with others. Living with HS also appears to change a person’s outlook and approach to life, such as affecting their patience and tolerance.

Each type of fatigue compounds the other, creating a cycle that can be difficult to break. – Person living with HS

My motivation has never diminished professionally, but it has diminished on other fronts in life. In particular, I have less patience and am less tolerant in my private life. – Person living with HS

HS-related sleep disturbance

HCPs commented that most patients reported sleep problems and that a range of instruments were used to assess sleep disturbance. Sleep disturbance is mainly attributed to HS-related pain, pruritus and lesion drainage, which prevent plwHS from having deep, restorative sleep. Rather, they tend to have light, fragmented sleep whereby they do not fully recharge. This sleep deficit can accumulate over time. In addition, flare-ups can cause night sweats or feelings of overheating, adding to the patient’s discomfort and making it more difficult for them to stay asleep. PlwHS also commented that tiredness,

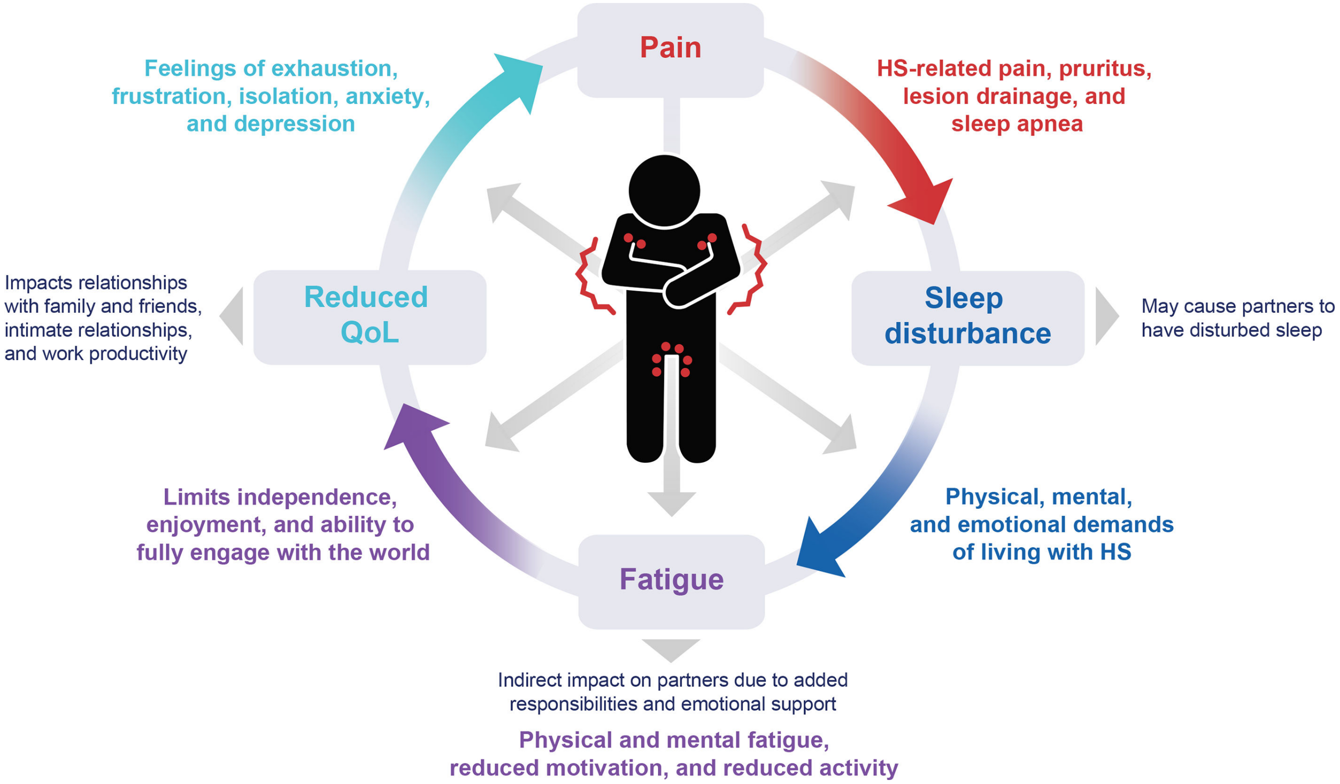

Fig. 1. Impact of fatigue and sleep disturbance on the quality of life (QoL) of people with hidradenitis suppurativa (HS).

mental fatigue and anxiety around potential flare-ups can affect sleep. Due to the level of pain from HS, individuals are often forced to sleep in uncomfortable positions and thus are unable to feel well rested. Some plwHS mentioned subconscious pruritus where they are unaware of itching and scratching that happens during the night until they wake up to find blood on their hands, clothing and bedding. Scratching is often a reflex, but it can irritate the skin further, producing excoriations that add to discomfort. Sudden overnight lesion drainage could also cause plwHS to wake and be forced to change clothing and bedding to remain comfortable. Some plwHS also commented that menopause can aggravate fatigue and sleep disturbance. Sleep disturbance was seen to exacerbate fatigue, thus creating a continuous cycle of exhaustion. Some individuals acknowledged comorbid obstructive sleep apnoea (OSA) as an additional contributor to restlessness. HCPs remarked that timely diagnosis of OSA and successful continuous positive airway pressure therapy can help improve sleep quality and reduce cardiovascular disease risk.

Worry about HS, [such as] "will this go on forever?" [and] "will I ever get a break from this hellish existence?" often disrupted my ability to get to sleep. The waking … was compounded by these worries when I did wake during the night (on top of the pain). I'd often wake (helped by the alarm clock) thinking "not another day of this! I can't keep doing this." – Person living with HS

Psychological impact of fatigue and sleep disturbance

PlwHS and HCPs acknowledged that HS has a considerable impact on an individual's psychological well-being. PlwHS described being frustrated, exhausted and tormented by a seemingly endless cycle of pain and sleep disturbance, which even led to suicidal ideation. HCPs commented that fatigue and sleep disturbance could contribute to or worsen coexisting mental health problems, such as anxiety and depression.

The domino effect of symptoms on psychological well-being was evident, with mood particularly being affected by brain fog (e.g. reduced concentration) and feeling overwhelmed. HS-related fatigue and sleep disturbance were felt to undermine people's resilience, amplifying their anxiety and perception of vulnerability. PlwHS felt that fatigue and sleep disturbance were psychological battles that required them to continuously review priorities, causing tiredness.

I am perceived as "useless" about the house (and this has been expressed to me), which perpetuates *low self-esteem, poor self-image, and feelings of guilt I already have about myself.* – Person living with HS

I also have brain fog and have to ensure to write down tasks, dates, and notes to prevent myself from forgetting or become overwhelmed. – Person living with HS

Impact of fatigue and sleep disturbance on romantic, family and social relationships

The strain of HS on partners and families was also recognized by individuals living with HS and HCPs because fatigue and sleep disturbance can reduce energy levels and interest in intimacy and family/social interactions, potentially leading to isolation. HCPs commented that a patient's disturbed sleep can also negatively affect their partner's sleep. Some people with HS express a lack of desire to seek a romantic partner out of concern for not being able to be physically, mentally or emotionally intimate with them due to exhaustion or discomfort, which can compound their loneliness and sense of isolation. HS can hinder sexual activity, particularly among individuals affected by HS in intimate areas of the body. This, alongside other challenges related to fatigue and sleep disturbance, can be a source of conflict between plwHS and their partners.

Fatigue often decreases social engagement, leading to more time spent at home or reduced participation in activities as a couple. This can affect a partner who is socially active and create a sense of missed shared experiences, requiring adaptability and understanding on both sides. Constant fatigue often limits a person's energy available for engaging in family events, playtime with children or household responsibilities. This can lead to feelings of guilt or disappointment, especially if family members rely on them for support or companionship.

Fatigue may mean needing more help with daily tasks or that family members additionally act as caregivers. Although families are often willing to provide support, this added responsibility can lead to stress or burnout over time, especially if it is not openly discussed and managed. Partners can feel the impact of fatigue indirectly, such as by taking on more household responsibilities, adjusting plans or offering emotional support. This dynamic, without clear communication, can affect the balance in the relationship and lead to feelings of frustration or concern for a partner's well-being. PlwHS also described feeling like failures for being too tired to effectively support friends and family. This was particularly evident when individuals were supporting their children or elderly parents.

Well, your family life suffers just like everything else. There are celebrations that you can't and don't want to go to, there are days that all you want to do is lie down and rest ... there are days that you can't be cooking, cleaning, shopping .... You can't contribute the same amount at home as someone who is healthy... – Person living with HS

Fatigue can make it challenging to attend casual meet-ups with friends/social gatherings. People with HS may cancel plans or decline invitations, leading to fewer social interactions and feelings of isolation. Social activities, such as a night out or a family gathering, require physical and mental energy that fatigue limits. HCPs report that patients often feel housebound or trapped at home as they avoid social situations due to fatigue. Friends and acquaintances may not fully understand the impact of fatigue or sleep disturbance, especially if it is invisible. They might see reduced involvement as disinterest or even feel hurt by frequent cancellations.

Patients have told me that they have had to cancel social engagements because they simply do not have the energy to leave the house. – HCP

PlwHS also spoke about the importance of social connection and education to help reduce the effects of fatigue.

Despite these difficulties, some strategies, such as psychological support, joining patient support groups, and pain management education, can help mitigate the effects of fatigue and facilitate social reintegration. With adequate support, the patient can learn to live better with the symptoms, identifying the moments of greatest energy to socialize and maintaining meaningful relationships with those who show understanding and openness. – Person living with HS

Impacts of fatigue and sleep disturbance on working lives

Fatigue and sleep disturbance can affect work productivity, and consequently, career progression and financial stability. The need for rest/recovery from exhaustion can lead to more frequent absenteeism and late starts/early departures from work. Disturbed sleep and fatigue can also increase susceptibility to illness, further affecting attendance. Chronic fatigue often diminishes enthusiasm and motivation, making it challenging to stay engaged with projects or team activities. This can lead to a lack of initiative or diminished interest in career development and growth opportunities. Fatigue can lead to errors, missed deadlines and lower-quality work, which can affect overall job performance. Constantly managing fatigue at work can leave little energy for people's personal lives, making it difficult to achieve a healthy work–life balance. Persistent fatigue, combined with the demands of work, can lead to burnout—a state of physical, emotional and mental exhaustion. Burnout can have long-term effects on well-being and may eventually lead to a person leaving their job or needing an extended recovery period.

[HS can have] … tremendous negative impact on work productivity. May lead to presenteeism and prevent advancement in the workplace, for example. – HCP

It should be noted that not all governments recognize the condition of disability in people with hidradenitis and this leads to many of them losing their jobs since there is no justification for the decreased productivity or the request for job adaptation. – Person living with HS

DISCUSSION

Our aim was to gain perspectives from plwHS and HCPs on the impact of fatigue and sleep disturbance in HS and their contributions to reduced QoL. Beyond pain, plwHS commented that fatigue was the most debilitating symptom, which was often linked to the physical, mental and emotional demands of living with HS. HCPs noted that patients were often unaware of the full impact of fatigue until HS treatment improved their symptoms. Beyond general fatigue, physical fatigue was the main facet that affected a patient's ability to perform daily activities, whereas mental fatigue resulted in individuals feeling overwhelmed and irritable and having impaired memory, which made it difficult to process information. Individuals also described having brain fog, a term that is often used to describe feeling dissociated and forgetful and needing to exert excessive cognitive effort across a range of conditions (23). Furthermore, plwHS reported having reduced motivation with each facet of fatigue, compounding others. Fatigue also limited their independence and ability to fully engage, which made it more difficult to manage their health. Although studies have shown that compared with the general population, plwHS have higher fatigue scores, awareness of fatigue as a symptom in HS must be improved (11).

Pain and itch have previously been shown to be important factors in poor sleep quality in plwHS (24). HS-related pain, pruritus and lesion drainage often lead to sleep disturbance, which can be further affected by HS flares causing night sweats and leading to fragmented and poor-quality sleep. Individuals commented that the endless cycle of pain and sleep disturbance caused feelings of frustration and exhaustion and had considerable impact on their well-being. This bidirectional relationship between physical symptoms and mental well-being underlines the importance of a holistic and multidisciplinary treatment approach.

The direct impact of systemic inflammation, beyond that of disease symptoms like pain or itch, on quality of sleep as well as on fatigue has previously been described (25–27). Future research should investigate whether fatigue in HS is mediated indirectly via the sleep disturbance caused through pain, itch and other HS symptoms or is directly mediated via the systemic inflammation and circulating cytokines and other systemic inflammatory mediators characterizing HS. Fatigue and sleep disturbance are well-known phenomena in several other immune-mediated, systemic inflammatory conditions, e.g. axial spondyloarthritis, inflammatory bowel disease, atopic dermatitis and urticaria (15–20). Fatigue and sleep disturbance can be improved via effective treatment of the underlying condition (28, 29).

Recognition of the impact of fatigue in HS requires the validation of a pre-existing instrument designed to measure fatigue or the development of a new HS-specific fatigue instrument. The HiSTORIC has initiated this process, identifying fatigue and drainage, alongside pain, as the most important symptoms to measure in HS (13). A HiSTORIC-supported fatigue instrument for HS is being developed (30).

The effects on romantic, family and social relationships were also recognized as leading to feelings of loneliness and stigmatization, a sense of isolation and reduced self-esteem, with some patients preferring to avoid social activities and intimate relationships. Fatigue and sleep disturbance also affect an individual's ability to work and reduce their interest in progressing their careers, which has financial effects (4, 7). PlwHS often find it difficult to achieve a healthy work–life balance, as fatigue and sleep disturbance prevent them from engaging in physical activity, which can improve well-being. A multidisciplinary approach to treatment and interventions, such as social support and improving confidence through education on self-management, could help improve QoL in plwHS who report feelings of stigmatization or isolation and could benefit those who are socially anxious (5, 8, 31).

The views expressed in this article are those of the authors and are not necessarily reflective of the wider population of plwHS. However, these perspectives highlight the importance of a person-centred approach to the management of HS. It is also important to consider the focused symptoms of fatigue and sleep disturbance in the whole context of the psychosocial burden of HS.

In conclusion, HS-related fatigue and sleep disturbance can profoundly affect daily functioning, relationships and work productivity, creating a cycle of physical and emotional exhaustion. Recognizing the multifaceted HS symptoms, providing reasonable adjustments in the workplace, encouraging open dialogue with HCPs and measuring fatigue with a validated instrument could help improve the QoL of plwHS.

ACKNOWLEDGEMENTS

The authors thank the HS patient advocates and HCPs for their input. Medical writing and editorial support were provided by Jacqui Oliver, PhD, and Simon R. Stones, PhD, CMPP, of Envision 90TEN, an Envision Medical Communications agency, a part of Envision Pharma Group, and funded by Novartis Pharma AG.

Funding sources: This study was sponsored by Novartis Pharma AG.

Ethics committee: This article is based on expert insights from the authors and does not contain any new studies with human participants performed by any of the authors. No ethical review/approval was required. The patients and HCPs were all authors on the manuscript and gave their permission for anonymized quotes to be included.

Conflict of interest: BMM has received honouraria for consulting from Incyte and MoonLake Immunotherapeutics; has received honouraria for consulting, participation in steering committees, speaking engagements and educational events from Novartis and UCB; has received support for attending meetings from Novartis and UCB; and is acting President, Board Member and volunteer for HS Ireland. DA is Founder and Chief Mission Officer of the International Association of Hidradenitis Suppurativa Network and a dedicated patient advocate; serves on the Board of Directors for the Hidradenitis Suppurativa Foundation; has worked as a consultant for Boehringer Ingelheim, Novartis and UCB; and has been a speaker for Boehringer Ingelheim, Eli Lilly and Company and Novartis. PB is an employee of the British Skin Foundation. MFBD has served as consultant/advisor for AbbVie France, Boehringer Ingelheim France, Janssen, Novartis and UCB; all fees were paid to her organization, French Association for Research on Hidradenitis. JLH is on the Board of Directors for the Hidradenitis Suppurativa Foundation and has served as an advisor, investigator and/or speaker for AbbVie, Aclaris, Amgen, AstraZeneca, Boehringer Ingelheim, Galderma, Incyte, Novartis, Pfizer, Sanofi, Regeneron and UCB. SL has worked as a consultant for AbbVie, Boehringer Ingelheim, Novartis, Sanofi and UCB; the fees have been paid to Asendhi. LP is Founder of the Hidradenitis and Me Support Group in Ontario, Canada; has served as a consultant for Boehringer Ingelheim and Novartis; and the Hidradenitis and Me Support Group has received grants from the Canadian Skin Patient Alliance and Novartis and for the collaboration of HS Awareness Week. GP is Director of Passion People APS, an Italian patient association. JCS reports honouraria for consulting/lectures from AbbVie, Almirall Hermal, Boehringer Ingelheim, Eli Lilly and Company, Galderma, Janssen, LEO, Novartis, Pfizer, Pierre Fabre, Sandoz, Sanofi Genzyme, Teva, Trevi and UCB; support for attending meetings from LEO, Novartis, Sanofi Genzyme and UCB; and honouraria as an investigator from AbbVie, Acelyrin, Almirall Hermal, Amgen, AnaptysBio, argenx, Aslan, Biocom, Bio Thera, Boehringer Ingelheim, Bristol Myers Squibb, Celltrion, CuraTeQ Biologics, DICE Therapeutics, Eli Lilly and Company, Helm AG, Galapagos, Galderma, Janssen, Incyte, InflaRx, Kiniksa, Kymab Ltd, LEO, Medimmune, Menlo, Merck, MoonLake, Novartis, Pfizer, Pierre Fabre, Regeneron, Takeda, Teva, Trevi, UCB, Uni and Ventyx. MG and IA are employees of and stockholders in Novartis. JRI has received a stipend as immediate past-Editor-in-Chief of the British Journal of Dermatology and an authorship honourarium from UpToDate. He is a consultant for Abbvie, Boehringer Ingelheim, Cantargia, ChemoCentryx, Citryll, Elasmogen, Engitix, Incyte, Indero, InflaRx, Insmed, Kymera Therapeutics, MoonLake, Novartis, UCB Pharma, UNION Therapeutics and Viela Bio. He is a co-copyright holder of HiSQOL, HIDE, Investigator Global Assessment and Patient Global Assessment instruments for HS and his department receives income from copyright of the Dermatology Life Quality Index (DLQI) and related instruments.

REFERENCES

1. Gooderham M, Papp K. The psychosocial impact of hidradenitis suppurativa. J Am Acad Dermatol 2015; 73: S19–22. https://doi.org/10.1016/j.jaad.2015.07.054
2. Reddy S, Strunk A, Garg A. All-cause mortality among patients with hidradenitis suppurativa: a population-based cohort study in the United States. J Am Acad Dermatol 2019; 81: 937–942. https://doi.org/10.1016/j.jaad.2019.06.016
3. Shaver RL, Jemec GBE, Freese R, Alavi A, Lowes MA, Goldfarb N. A survey of clinicians regarding preferred severity assessment tools for hidradenitis suppurativa. Int J Dermatology 2021; 60: e248–e251. https://doi.org/10.1111/ijd.15295
4. Kimball AB, Kirby J, Ingram JR, Tran T, Pansar I, Ciaravino V, et al. Burden of hidradenitis suppurativa: a systematic literature review of patient reported outcomes. Dermatol Ther 2024; 14: 83–98. https://doi.org/10.1007/s13555-023-01085-w
5. Singh R, Kelly KA, Senthilnathan A, Feldman SR, Pichardo RO. Stigmatization, a social perception which may have a debilitating impact on hidradenitis suppurativa patients: an observational study. Arch Dermatol Res 2023; 315: 1049–1052. https://doi.org/10.1007/s00403-022-02412-5
6. Caccavale S, Tancredi V, Boccellino MP, Babino G, Fulgione E, Argenziano G. Hidradenitis suppurativa burdens on mental health: a literature review of associated psychiatric disorders and their pathogenesis. Life 2023; 13: 189. https://doi.org/10.3390/life13010189
7. Schneider-Burrus S, Kalus S, Fritz B, Wolk K, Gomis-Kleindienst S, Sabat R. The impact of hidradenitis suppurativa on professional life. Br J Dermatol 2023; 188: 122–130. https://doi.org/10.1093/bjd/ljac027
8. Perche PO, Singh R, Senthilnathan A, Feldman SR, Pichardo RO. Hidradenitis suppurativa's impact on social activities: an observational study. Cureus 2022; 14: e25292. https://doi.org/10.7759/cureus.25292
9. Matusiak Ł. Profound consequences of hidradenitis suppurativa: a review. Br J Dermatol 2020; 183: e171–e177. https://doi.org/10.1111/bjd.16603
10. Matusiak Ł, Szczęch J, Kaaz K, Lelonek E, Szepietowski JC. Clinical characteristics of pruritus and pain in patients with hidradenitis suppurativa. Acta Derm Venereol 2018; 98: 191–194. https://doi.org/10.2340/00015555-2815
11. Chodziuk A, Holgersen N, Nielsen VW, Thyssen JP, Egeberg A, Thomsen SF. Fatigue is associated with disease severity in adult patients with hidradenitis suppurativa. JEADV Clin Pract 2024; 3: 769–778. https://doi.org/10.1002/jvc2.345
12. Yeroushalmi S, Ildardashty A, Elhage KG, Chung M, Bartholomew E, Hakimi M, et al. Hidradenitis suppurativa and sleep: a systematic review. Arch Dermatol Res 2023; 315: 1409–1415. https://doi.org/10.1007/s00403-022-02460-x
13. Thorlacius L, Ingram JR, Villumsen B, Esmann S, Kirby JS, Gottlieb AB, et al. A core domain set for hidradenitis suppurativa trial outcomes: an international Delphi process. Br J Dermatol 2018; 179: 642–650. https://doi.org/10.1111/bjd.16672
14. Smets EM, Garssen B, Bonke B, De Haes JC. The Multidimensional Fatigue Inventory (MFI) psychometric qualities of an instrument to assess fatigue. J Psychosom Res 1995; 39: 315–325. https://doi.org/10.1016/0022-3999(94)00125-o
15. Tang H, Singh BSM, Fong W. Prevalence and factors associated with fatigue in patients with axial spondyloarthritis: a systematic review and meta-analysis. Rheumatol Adv Pract 2023; 7: rkad084. https://doi.org/10.1093/rap/rkad084
16. Mann C, Dreher M, Weeß HG, Staubach P. Sleep disturbance in

patients with urticaria and atopic dermatitis: an underestimated burden. Acta Derm Venereol 2020; 100: adv00073. https://doi.org/10.2340/00015555-3416

17. Mann C, Gorai S, Staubach-Renz P, Goldust M. Sleep disorders in dermatology - a comprehensive review. J Dtsch Dermatol Ges 2023; 21: 577–584. https://doi.org/10.1111/ddg.14992
18. Polak D, Korkosz M, Guła Z. Sleep disorders in rheumatoid arthritis, axial spondyloarthritis and psoriatic arthritis. Rheumatol Int 2025; 45: 36. https://doi.org/10.1007/s00296-024-05780-5
19. Toledano E, Hidalgo C, Gómez-Lechón L, Ibáñez M, Chacón CC, Martín-Vallejo J, et al. SLEEP quality in patients with psoriatic arthritis and its relationship with disease activity and comorbidities: a cross-sectional study. Sci Rep 2023; 13: 22927. https://doi.org/10.1038/s41598-023-48723-z
20. Barnes A, Toson B, Bryant RV, Mukherjee S, Andrews JM, Spizzo P, et al. Latent profiles of fatigue in inflammatory bowel disease. BMC Gastroenterol 2024; 24: 148. https://doi.org/10.1186/s12876-024-03239-2
21. Sayed C, Martorell A, Alarcon I, Kasparek T, Frade S, McGrath BM, et al. 42927 Unmet needs in treatment options and management strategies in hidradenitis suppurativa: understanding the patient perspective through social media listening. J Am Acad Dermatol 2023; 89: AB102. https://doi.org/10.1016/j.jaad.2023.07.411
22. Garg A, Neuren E, Cha D, Kirby JS, Ingram JR, Jemec GBE, et al. Evaluating patients' unmet needs in hidradenitis suppurativa: results from the Global Survey of Impact and Healthcare Needs (VOICE) project. J Am Acad Dermatol 2020; 82: 366–376. https://doi.org/10.1016/j.jaad.2019.06.1301
23. McWhirter L, Smyth H, Hoeritzauer I, Couturier A, Stone J, Carson AJ. What is brain fog? J Neurol Neurosurg Psychiatry 2023; 94: 321–325. https://doi.org/10.1136/jnnp-2022-329683
24. Kaaz K, Szepietowski JC, Matusiak Ł. Influence of itch and pain on sleep quality in patients with hidradenitis suppurativa. Acta Derm Venereol 2018; 98: 757–761. https://doi.org/10.2340/00015555-2967
25. Mullington JM, Simpson NS, Meier-Ewert HK, Haack M. Sleep loss and inflammation. Best Pract Res Clin Endocrinol Metab 2010; 24: 775–784. https://doi.org/10.1016/j.beem.2010.08.014
26. Cameron S, Donnelly A, Broderick C, Arichi T, Bartsch U, Dazzan P, et al. Mind and skin: exploring the links between inflammation, sleep disturbance and neurocognitive function in patients with atopic dermatitis. Allergy 2024; 79: 26–36. https://doi.org/10.1111/all.15818
27. Trupiano N, Young K, Echuri H, Maghfour J, Orenstein LAV, Hamzavi I. Exploring itch in hidradenitis suppurativa with lessons from atopic dermatitis and psoriasis. J Dermatol 2025; 52: 239–246. https://doi.org/10.1111/1346-8138.17622
28. Silverberg JI, Gooderham MJ, Paller AS, Deleuran M, Bunick CG, Gold LFS, et al. Early and sustained improvements in symptoms and quality of life with upadacitinib in adults and adolescents with moderate-to-severe atopic dermatitis: 52-week results from two phase III randomized clinical trials (Measure Up 1 and Measure Up 2). Am J Clin Dermatol 2024; 25: 485–496. https://doi.org/10.1007/s40257-024-00853-4
29. Giménez-Arnau A, Maurer M, Bernstein J, Staubach P, Barbier N, Hua E, et al. Ligelizumab improves sleep interference and disease burden in patients with chronic spontaneous urticaria. Clin Transl Allergy 2022; 12: e12121. https://doi.org/10.1002/clt2.12121
30. Disease state: hidradenitis suppurativa. The Hidradenitis Suppurativa Core Outcomes Set International Collaboration. [cited 2025 June 9]. Available from: https://www.c3outcomes.org/historic
31. Mann C, Staubach P, Grabbe S, Wegner J, Hennig K, Nikolakis G, et al. Self-management-competency as a new target in Hidradenitis suppurativa care. J Dermatolog Treat 2023; 34: 2245082. https://doi.org/10.1080/09546634.2023.2245082