

RESEARCH ARTICLE

Multidimensional characteristics of anhedonia in hidradenitis suppurativa: A cross-sectional study

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Abstract

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uj.edu.pl)**Citation:** Szepietowska M, Krajewski PK, Pacan P, Wojas-Pelc A, Matusiak L, Jaworek AK. Multidimensional characteristics of anhedonia in hidradenitis suppurativa: A cross-sectional study. *Health Psychol Res.* 2026;14(3):026100057. doi: 10.36922/HPR026100057**Received:** March 8, 2026**Revised:** June 24, 2026**Accepted:** July 1, 2026**Published online:** July 17, 2026**Copyright:** © 2026 Author(s). This is an Open-Access article distributed under the terms of the Creative Commons AttributionNon-Commercial 4.0 International (CC BY-NC 4.0), which permits all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.**Publisher's Note:** AccScience Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.**Background:** Anhedonia is increasingly recognized as an important psychological dimension in chronic diseases. Hidradenitis suppurativa (HS) is a chronic dermatosis with a vast psychosocial burden; however, anhedonia in HS has not been previously investigated.**Objective:** To assess the prevalence and multidimensional characteristics of anhedonia in patients with HS.**Methods:** A total of 113 patients with HS (56 females, 57 males; mean age 37.3 ± 12.3 years) were included. Disease severity was evaluated using Hurley staging and the International Hidradenitis Suppurativa Severity Score System (IHS4). Anhedonia was assessed using the Snaith–Hamilton Pleasure Scale, the Anticipatory and Consummatory Interpersonal Pleasure Scale (ACIPS), and the Temporal Experience of Pleasure Scale (TEPS). Quality of life was measured using the Dermatology Life Quality Index (DLQI) and Hidradenitis Suppurativa Quality of Life. Illness acceptance was assessed with the Acceptance of Illness Scale. Depression and anxiety symptoms were evaluated using the Patient Health Questionnaire-9, the Generalized Anxiety Disorder 7-item scale, and the modified Hospital Anxiety and Depression Scale.**Results:** Anhedonia was present in 37.2% of patients with no sex differences. It was not associated with Hurley stage or disease duration but correlated with higher IHS4 scores. Patients with more severe disease had lower ACIPS and TEPS scores, indicating impairments in anticipatory and consummatory pleasure. Greater anhedonia is associated with poorer quality of life, lower illness acceptance, and more severe depressive and anxiety symptoms (all $p < 0.05$). In multivariable analysis, poor quality of life (DLQI > 10) was the only independently associated factor of anhedonia (odds ratio = 4.32, 95% confidence interval: 1.25–14.88).**Conclusion:** Anhedonia affects over one-third of patients with HS and represents an important multidimensional component of disease burden.**Keywords:** Hidradenitis suppurativa; Anhedonia; Psychiatric comorbidities

1. Introduction

Hidradenitis suppurativa (HS) is a chronic, inflammatory, and recurrent disorder of the pilosebaceous unit that primarily affects apocrine gland-bearing regions such as the axillae, groin, gluteal area, and perineum.^{1,2} Despite its relatively common occurrence (approximately 1%),³ HS often remains underdiagnosed, leading to significant diagnostic delays and fragmented care.^{4,5}

Hidradenitis suppurativa, now recognized as a systemic inflammatory disease, is associated with a broad spectrum of comorbidities.^{2,6-8} Beyond physical symptoms, HS imposes a profound psychosocial burden.⁷⁻¹⁰ Pain, restricted mobility, and lesions located in intimate body regions significantly impair daily functioning, interpersonal relationships, and sexual health.^{11,12} Notably, individuals with HS show disproportionately high rates of psychiatric comorbidities, including depression, anxiety, and increased suicidality.¹³⁻¹⁵

Anhedonia, broadly defined as a reduced ability or diminished motivation to experience pleasure, is increasingly recognized as a key dimension of affective functioning. It encompasses impairments in both anticipatory pleasure—the expectation of reward—and consummatory pleasure—the enjoyment derived from engaging in rewarding activities. Moreover, anhedonia is closely linked to deficits in reinforcement learning, influencing how individuals anticipate outcomes and adapt their behavior based on rewarding experiences.¹⁶ Although classically associated with depressive disorders, anhedonia is increasingly regarded as a transdiagnostic phenomenon that extends beyond traditional psychiatric diagnoses. It has been documented not only in psychotic and substance-related disorders, but also in several chronic somatic conditions, including chronic pain syndromes, fibromyalgia, and Parkinson's disease. Recent evidence suggests that anhedonia may represent a multidimensional construct influenced by biological, psychological, and behavioral factors that transcend specific disease entities. In addition to disease-related factors, hedonic functioning has been linked to temperamental and personality traits, chronobiological characteristics, and metabolic disturbances such as insulin resistance. These findings support the view that anhedonia reflects a broader dimension of human functioning rather than a symptom restricted to a single psychiatric disorder.¹⁶⁻¹⁸

Anhedonia remains understudied in dermatology.^{19,20} To date, no research has directly examined anhedonia in patients with HS, and only limited evidence exists regarding its presence in other cutaneous diseases.^{19,20} Therefore, the present study was designed to evaluate anhedonia in patients with HS and to investigate its association with

disease severity, subjective symptom intensity, quality of life (QoL), and secondary psychiatric disturbances such as depression and anxiety.

2. Materials and methods

2.1. Ethical considerations

The study procedures adhered to the Declaration of Helsinki guidelines. Approval for the research project was granted by the local ethics committee (Ethics Committee of Lower Silesian Medical Chamber, Wrocław, Poland [decision number 12/BNBP/2025]). Written informed consent was obtained from all participants before inclusion in the study.

2.2. Study population

Sample size calculation was performed using G*Power (version 3.1) for a bivariate normal correlation model. Assuming a two-sided significance level of 0.05, statistical power of 80%, and an anticipated effect size of $r = 0.30$ (moderate effect size), the minimum required sample size was estimated at 85 participants. To account for incomplete questionnaires or missing data, the target sample size was increased by approximately 10–15%. In our study, the group of 121 consecutive HS patients from two tertiary dermatology centers in Wrocław and Cracow, Poland, was invited to participate in this project. A total of 113 of them (93.4% response rate) filled all the necessary questionnaires and were considered for final analysis (Table 1). Notably, this sample size also meets the minimum requirement for 90% statistical power under the same assumptions.

2.3. Hidradenitis suppurativa clinical severity assessment

The severity of HS was determined using two established tools: the Hurley classification²¹ and the International Hidradenitis Suppurativa Severity Score System (IHSS4).²²

2.4. Subjective symptom assessment

Pain and itch intensity were measured using the Numeric Rating Scale.^{23,24} Participants reported the severest pain and itch they had experienced during the three days prior to the assessment, as well as the most severe ones they had felt since their symptoms first appeared.^{23,24}

2.5. Anhedonia assessments

Three validated Polish-language instruments were used to assess anhedonia: the Snaith–Hamilton Pleasure Scale (SHAPS),²⁵ the Anticipatory and Consummatory Interpersonal Pleasure Scale (ACIPS),²⁶ and the Temporal Experience of Pleasure Scale (TEPS).²⁷

The SHAPS evaluates general hedonic capacity and/or

hedonic tone. Its main focus is on the ability to experience enjoyment from pleasurable activities (consummatory pleasure). The scale includes 14 statements rated on a four-point response format (definitely agree, agree, disagree, strongly disagree). Both “disagree” options receive 0 points, while both “agree” options receive 1 point, resulting in a total possible score between 0 and 14. Higher scores indicate greater anhedonia. A score above 2 suggests the presence of anhedonia.²⁵

The ACIPS assesses the capacity to experience interpersonal and social pleasure. The questionnaire comprises 17 items related to forming social connections and sustaining relationships. Seven items measure anticipatory pleasure, while 10 assess consummatory pleasure. The instrument includes three domains: intimate social interactions (ACIPS-ISI), group social interactions (ACIPS-GSI), and social bonding/making connections (ACIPS-SBMC). Responses are rated on a six-point Likert scale (1 = very false for me, 6 = very true for me). Total scores range from 17 to 102, with lower scores reflecting higher levels of anhedonia.²⁶

The TEPS consists of 18 items and is advantageous in that it separates anticipatory and consummatory aspects of pleasure. Ten items address anticipatory pleasure, and eight measure consummatory pleasure. As with ACIPS, responses are given on a six-point Likert scale (1 = very false, 6 = very true). The overall score ranges from 18 to 108, with subscale scores ranging from 10 to 60 for anticipatory pleasure and 8 to 48 for consummatory pleasure. Lower scores correspond to reduced pleasure experience.²⁷

2.6. Quality of life assessment

Quality of life in patients was assessed using the Polish versions of two questionnaires: a dermatology-oriented one—the Dermatology Life Quality Index (DLQI)^{28,29}—and a disease-specific one—the Hidradenitis Suppurativa Quality of Life measure (HiSQOL).³⁰

The DLQI is a widely used instrument designed to quantify the impact of dermatological conditions on various aspects of daily functioning during the previous week.²⁸ Scores are interpreted as follows: 0–1 point = no impact on QoL, 2–5 points = small effect, 6–10 points = moderate effect, 11–20 points = large effect, and 21–30 points = extremely large effect.²⁹

The HiSQOL is a 17-item HS-specific questionnaire introduced in 2019 by Thorlacius *et al.*³⁰ It assesses the QoL of individuals with HS based on experiences in the prior seven days. The instrument captures multiple aspects of the disease’s influence, including physical symptoms, emotional and psychosocial burden, and lifestyle

adjustments related to living with HS.³⁰

2.7. Depression and anxiety assessment

Depressive and anxiety symptoms in the study cohort were evaluated using several validated self-administered Polish-language tools: the Patient Health Questionnaire-9 (PHQ-9),^{31,32} the Generalized Anxiety Disorder 7-item scale (GAD-7),^{33,34} and the modified Hospital Anxiety and Depression Scale (HADS-M).^{35,36}

The PHQ-9 comprises nine questions aligned with the Diagnostic and Statistical Manual of Mental Disorders IV diagnostic criteria for major depressive disorder. A total score of 10 or higher serves as the diagnostic threshold.^{31,32}

The GAD-7 is a self-report screening measure for generalized anxiety disorder and an indicator of overall anxiety severity. A score of 8 or greater is typically used to identify individuals likely to have generalized anxiety disorder.^{33,34}

The HADS-M is an adapted form of the original instrument created by Zigmond *et al.*³⁵ It contains 16 items. Interpretation of the depression and anxiety components is as follows: scores between 0 and 7 indicate no disorder, 8–10 suggest borderline symptoms, and 11–21 reflect clinically relevant levels.³⁶

2.8. Statistical analysis

All statistical analyses were conducted using IBM Statistical Package for Social Sciences version 26. Initially, data normality was verified using the Shapiro–Wilk test. Descriptive statistics including minimum, maximum, mean, standard deviation, median, and quartiles were calculated. Depending on the data distribution, comparisons of quantitative variables were performed using either the Student’s *t*-test or the Mann–Whitney *U* test. Categorical variables were analyzed using the Chi-square test; for comparisons across more than two groups, analysis of variance or the Kruskal–Wallis test was applied, followed by post-hoc analyses with Bonferroni correction. A two-tailed *p*-value < 0.05 was considered statistically significant.

Additionally, multivariable logistic regression analysis was performed to identify independently associated factors for the occurrence of anhedonia in patients with HS, with SHAPS > 2 points as the dependent variable. The model included age, sex, disease severity (IHS4), depressive symptoms (PHQ-9), anxiety symptoms (GAD-7), and large impact on QoL (DLQI > 10 points) entered simultaneously. Results were reported as adjusted odds ratios (ORs) with 95% confidence intervals (CIs) and *p*-values. Given that a logistic regression model was applied, conventional *R*² and

adjusted R^2 statistics were not used.

3. Results

3.1. Patients' characteristics

Detailed patients' characteristics are given in [Table 1](#). The study cohort comprised 56 women (49.6%) and 57 men (50.4%). The average age of the participants was 37.3 ± 12.3 years, and the mean disease duration since diagnosis was 10.3 ± 6.5 years. The majority of HS patients were at Hurley stage II (72.6%), followed by Hurley stage III (15.0%) and Hurley stage I (12.4%). According to IHS4 classification, severe disease was found in 37.2%, followed by moderate and mild HS (34.5% and 28.3%, respectively) ([Table 1](#)).

3.2. Anhedonia prevalence and severity

Based on the SHAPS assessment, anhedonia was present in 42 out of 113 (37.2%) HS patients. The prevalence of anhedonia did not differ significantly between sexes, occurring in 20 of 56 females (35.7%) and 22 of 57 males (38.5%) ($p = 0.428$). The overall severity of anhedonia measured with the SHAPS was 2.4 ± 3.1 points. No significant sex-related differences were observed, with mean scores of 2.3 ± 3.0 points in females and 2.7 ± 3.3 points in males ($p = 0.512$). Likewise, global anhedonia severity assessed using the ACIPS total score and the TEPS total score did

not differ significantly between females and males ([Table 2](#)). Analyses of specific anhedonia dimensions revealed comparable levels of anticipatory and consummatory pleasure between sexes, as measured by both ACIPS and TEPS subscales. Furthermore, no significant sex-related differences were found across the ACIPS social domains, including ACIPS-ISI, ACIPS-GSI, and ACIPS-SBMC ([Table 2](#)).

3.3. Relationship of anhedonia with disease staging, disease severity, subjective symptoms assessments, and disease duration

Anhedonia was not associated with disease staging based on the Hurley classification. No significant differences in anhedonia measures were found across Hurley stages (all $p > 0.05$). In contrast, anhedonia showed a clear relationship with disease severity assessed using the IHS4. Group comparisons revealed that patients with severe disease exhibited significantly greater anhedonia than those with mild disease, as reflected by progressively lower scores on the ACIPS total score, its anticipatory and consummatory subscales, and all ACIPS social domains (ACIPS-ISI, ACIPS-GSI, and ACIPS-SBMC) ([Table 3](#)). Similarly, the TEPS total score, as well as anticipatory and consummatory pleasure measures, decreased significantly

Table 1. Clinical characteristics of the study population

Variable	Total	Females	Males	<i>p</i> -value
Number of patients, <i>n</i> (%)	113	56 (49.6%)	57 (50.4%)	
Age (years), mean $\pm$ SD	37.3 ± 12.3	37.7 ± 12.7	37.0 ± 12.0	0.534
Disease duration (years), mean $\pm$ SD	10.3 ± 6.5	10.7 ± 7.2	9.9 ± 5.7	0.367
Hurley stage, <i>n</i> (%)				0.003
Stage I	17 (15.0%)	11 (19.6%)	6 (10.5%)	
Stage II	82 (72.6%)	44 (78.6%)	38 (66.7%)	
Stage III	14 (12.4%)	1 (1.7%)	13 (22.8%)	
IHS4, mean $\pm$ SD	9.2 ± 7.0	8.1 ± 6.7	10.3 ± 7.3	0.176
IHS4 categories, <i>n</i> (%)				0.232
IHS4 ≤ 3 points, mild	32 (28.3%)	21 (37.5%)	11 (19.3%)	
IHS4 4–10 points, moderate	39 (34.5%)	18 (32.1%)	21 (36.8%)	
IHS4 > 10 points, severe	42 (37.2%)	17 (30.4%)	25 (43.9%)	
Itch (NRS points), mean $\pm$ SD	5.7 ± 2.2	5.9 ± 2.3	5.5 ± 2.1	0.327
Pain (NRS points), mean $\pm$ SD	7.3 ± 2.1	7.8 ± 2.1	6.8 ± 2.1	0.126

Abbreviations: IHS4: International Hidradenitis Suppurativa Severity Score System; NRS: Numeric Rating Scale; SD: Standard deviation.

Table 2. Anhedonia prevalence and severity measures in the whole sample and by sex

Variable	Whole group (<i>n</i> = 113)	Females (<i>n</i> = 56)	Males (<i>n</i> = 57)	<i>p</i> -value
Prevalence of anhedonia (SHAPS $\geq$ 2 points), <i>n</i> (%)	42/113 (37.2%)	20 (35.7%)	22 (38.5%)	0.428
SHAPS score	2.4 $\pm$ 3.1	2.3 $\pm$ 3.0	2.7 $\pm$ 3.3	0.512
ACIPS total score	78.5 $\pm$ 14.2	79.8 $\pm$ 13.8	75.9 $\pm$ 14.9	0.157
ACIPS anticipatory	32.3 $\pm$ 6.1	32.8 $\pm$ 5.9	31.2 $\pm$ 6.5	0.184
ACIPS consummatory	46.2 $\pm$ 9.2	47.0 $\pm$ 8.9	44.7 $\pm$ 9.7	0.195
ACIPS-ISI	31.4 $\pm$ 7.2	31.8 $\pm$ 7.0	30.7 $\pm$ 7.6	0.428
ACIPS-GSI	19.5 $\pm$ 5.0	19.8 $\pm$ 5.0	18.9 $\pm$ 5.1	0.382
ACIPS-SBMC	21.4 $\pm$ 5.4	21.7 $\pm$ 5.4	20.8 $\pm$ 5.5	0.361
TEPS total score	79.1 $\pm$ 16.3	80.5 $\pm$ 15.8	76.2 $\pm$ 17.1	0.165
TEPS anticipatory	43.8 $\pm$ 10.1	44.7 $\pm$ 9.8	41.9 $\pm$ 10.6	0.149
TEPS consummatory	35.3 $\pm$ 7.8	35.8 $\pm$ 7.5	34.3 $\pm$ 8.3	0.312

Note: Values are presented as mean $\pm$ standard deviation unless otherwise indicated.

Abbreviations: ACIPS: Anticipatory and Consummatory Interpersonal Pleasure Scale; GSI: General social interactions; ISI: Intimate social interactions; SBMC: Social bonding and making connections; SHAPS: Snaith–Hamilton Pleasure Scale; TEPS: Temporal Experience of Pleasure Scale.

with increasing disease severity groups. Only SHAPS scores did not differ significantly between IHS4 severity groups (Table 3).

These findings were further supported by correlation analyses, which demonstrated significant associations between anhedonia severity and IHS4 scores. IHS4 scores correlated negatively with ACIPS and TEPS measures, including both anticipatory and consummatory components, as well as all ACIPS social domains. The details of these correlations are grouped in Table 4.

No consistent associations were found between anhedonia and subjective symptom assessments, including pain and pruritus intensity, evaluated both across the entire disease course and during the preceding three days. Neither global anhedonia severity, measured with SHAPS, nor anticipatory and consummatory pleasure, assessed using ACIPS, showed significant correlations with pain or itch intensity at any time point (detailed data not shown). Although the TEPS total score did not correlate with pain intensity, a mild correlation ($r = -0.264$, $p = 0.038$) was observed between the TEPS total score and itch severity assessed over the last three days. However, this association was isolated and not supported by correlations with itch severity assessed over the entire disease course, nor by other anhedonia measures.

No associations were found between anhedonia and disease duration. Disease duration was not significantly associated with global anhedonia severity, anticipatory pleasure, consummatory pleasure, or any of the ACIPS social domains (all $p > 0.05$).

3.4. Relationship of anhedonia with quality of life and disease acceptance

Anhedonia showed a consistent and significant relationship with QoL impairment and disease acceptance. Higher levels of anhedonia, reflected by higher SHAPS scores, were associated with poorer dermatology-specific QoL measured using the DLQI and HiSQOL, as well as with lower levels of illness acceptance (AIS) (Table 5).

Interpersonal and motivational dimensions of pleasure, assessed using the ACIPS total score, were negatively correlated with DLQI and HiSQOL scores, indicating that reduced capacity to experience pleasure was associated with greater QoL impairment. Similarly, lower ACIPS scores were strongly associated with poorer disease acceptance, as reflected by significant negative correlations with AIS. Further analyses demonstrated that both anticipatory and consummatory components of interpersonal pleasure were significantly related to QoL and illness acceptance. Lower scores on the ACIPS anticipatory and consummatory subscales were associated

Table 3. Anhedonia severity measures by International Hidradenitis Suppurativa Severity Score System

Variable	Mild	Moderate	Severe	<i>p</i> -value
SHAPS	2.0 ± 4.0	1.2 ± 2.3	1.5 ± 2.5	0.757
ACIPS total score	86.9 ± 10.5*	75.5 ± 17.7	69.7 ± 16.6	<0.001
ACIPS anticipatory	35.8 ± 4.7***	31.5 ± 6.5	29.0 ± 7.0	<0.001
ACIPS consummatory	51.1 ± 6.2***	44.0 ± 11.6	40.7 ± 10.2	<0.001
ACIPS-ISI	35.3 ± 6.5*	31.9 ± 7.7	27.6 ± 7.4	0.003
ACIPS-GSI	23.4 ± 6.2*	19.8 ± 6.9	16.9 ± 6.1	<0.001
ACIPS-SBMC	21.7 ± 5.7*	19.9 ± 6.6	17.7 ± 6.2	0.010
TEPS total score	85.0 ± 16.3*	76.6 ± 18.0	67.5 ± 15.6	0.007
TEPS anticipatory	46.7 ± 10.1*	41.2 ± 10.2	35.4 ± 9.2	<0.001
TEPS consummatory	38.3 ± 7.6*	35.4 ± 8.6	32.1 ± 7.5	0.029

Notes: Values are presented as mean ± standard deviation. *p*-values refer to Kruskal–Wallis tests for comparisons across severity groups. *significant difference between mild and severe groups; **significant difference between mild and moderate groups.

Abbreviations: ACIPS: Anticipatory and Consummatory Interpersonal Pleasure Scale; GSI: General social interactions; ISI: Intimate social interactions; SBMC: Social bonding and making connections; SHAPS: Snaith–Hamilton Pleasure Scale; TEPS: Temporal Experience of Pleasure Scale.

with higher DLQI scores and lower AIS scores. Associations with HiSQOL were also observed, although correlations with consummatory pleasure were weaker and did not reach statistical significance. Social aspects of anhedonia were likewise linked to patient-reported outcomes. Lower scores of ACIPS-ISI, ACIPS-GSI, and ACIPS-SBMC were significantly associated with poorer QoL and reduced disease acceptance (Table 5).

Comparable patterns were observed for hedonic capacity assessed using the TEPS. Lower TEPS total scores, as well as reduced anticipatory and consummatory pleasure measures, were associated with worse dermatology-related QoL (DLQI) and lower illness acceptance. While most associations were statistically significant, the correlation between TEPS consummatory pleasure and HiSQOL, similar to that for ACIPS consummatory pleasure, was not significant (Table 5).

3.5. Relationship of anhedonia with possible depression and anxiety

According to the predefined cut-off values, probable depression (PHQ-9 ≥ 10 points) was identified in 33 patients (29.2%), while probable anxiety disorder (GAD-7 ≥ 8 points) was present in 21 patients (18.6%). Fifteen patients (13.3%) fulfilled the criteria for both probable depression and probable anxiety, whereas 24 patients (21.2%) met the cut-off for either depression or anxiety

alone. The remaining 74 patients (65.5%) did not meet the criteria for either disorder.

Table 4. Correlations between anhedonia-related measures and International Hidradenitis Suppurativa Severity Score System

Variable	IHS4
SHAPS	$r = 0.035, p = 0.751$
ACIPS total score	$r = -0.431, p < 0.001$
ACIPS anticipatory	$r = -0.427, p < 0.001$
ACIPS consummatory	$r = -0.418, p < 0.001$
ACIPS-ISI	$r = -0.331, p < 0.001$
ACIPS-GSI	$r = -0.355, p < 0.001$
ACIPS-SBMC	$r = -0.303, p = 0.001$
TEPS total score	$r = -0.374, p = 0.001$
TEPS anticipatory	$r = -0.426, p < 0.001$
TEPS consummatory	$r = -0.323, p = 0.003$

Note: Values are presented as Spearman correlation coefficients (*r*) with corresponding *p*-values.

Abbreviations: ACIPS: Anticipatory and Consummatory Interpersonal Pleasure Scale; GSI: General social interactions; ISI: Intimate social interactions; SBMC: Social bonding and making connections; SHAPS: Snaith–Hamilton Pleasure Scale; TEPS: Temporal Experience of Pleasure Scale.

Table 5. Correlations between anhedonia measures and quality of life and illness acceptance

Variable	DLQI	HiSQOL	AIS
SHAPS	$r = 0.391; p < 0.001$	$r = 0.301; p = 0.001$	$r = 0.272; p = 0.004$
ACIPS total score	$r = -0.269; p = 0.004$	$r = -0.222; p = 0.019$	$r = -0.328; p < 0.001$
ACIPS anticipatory	$r = -0.267; p = 0.005$	$r = -0.263; p = 0.005$	$r = -0.356; p < 0.001$
ACIPS consummatory	$r = -0.257; p = 0.006$	$r = -0.182; p = 0.054$	$r = -0.300; p = 0.001$
ACIPS-ISI	$r = -0.258; p = 0.006$	$r = -0.236; p = 0.011$	$r = -0.312; p = 0.001$
ACIPS-GSI	$r = -0.276; p = 0.003$	$r = -0.219; p = 0.019$	$r = -0.334; p < 0.001$
ACIPS-SBMC	$r = -0.241; p = 0.010$	$r = -0.188; p = 0.047$	$r = -0.295; p = 0.002$
TEPS total score	$r = -0.300; p = 0.001$	$r = -0.206; p = 0.031$	$r = -0.258; p = 0.006$
TEPS anticipatory	$r = -0.261; p = 0.006$	$r = -0.246; p = 0.010$	$r = -0.247; p = 0.009$
TEPS consummatory	$r = -0.291; p = 0.002$	$r = -0.157; p = 0.101$	$r = -0.251; p = 0.008$

Note: Values are presented as Spearman correlation coefficients (r) with corresponding p -values.

Abbreviations: ACIPS: Anticipatory and consummatory interpersonal pleasure scale; AIS: Acceptance Illness Scale; DLQI: Dermatology Life Quality Index; GSI: General social interactions; HiSQOL: Hidradenitis Suppurativa Quality of Life; ISI: Intimate social interactions; SBMC: Social bonding and making connections; SHAPS: Snaith–Hamilton Pleasure Scale; TEPS: Temporal Experience of Pleasure Scale.

Anhedonia was consistently associated with both depressive and anxiety symptoms. Higher SHAPS scores correlated positively with greater severity of possible depression, assessed with PHQ-9 and HADS-D, and probable anxiety measured using GAD-7 and HADS-A. Conversely, lower scores on the ACIPS and TEPS, including both anticipatory and consummatory dimensions, as well as lower scores of social ACIPS domains, were significantly associated with higher levels of depressive and anxiety symptoms (Table 6).

Further subgroup analyses demonstrated significant differences in anhedonia severity according to the coexistence of probable depression and anxiety. Patients fulfilling criteria for both disorders showed the highest levels of anhedonia, with progressively higher SHAPS scores (0.92 ± 2.15 vs. 1.65 ± 2.48 vs. 3.20 ± 4.28 points; $p = 0.019$) and lower ACIPS total scores (80.27 ± 16.45 vs. 76.87 ± 16.30 vs. 62.36 ± 16.39 points; $p = 0.002$) among patients with neither disorder, one disorder only, and both disorders, respectively. Post-hoc analysis confirmed significantly lower ACIPS scores in patients with concomitant probable depression and anxiety compared with those without either disorder ($p = 0.001$). No significant differences were observed for TEPS total scores ($p = 0.328$).

3.6. Multivariable logistic regression analysis

In multivariable logistic regression with SHAPS ≥ 2 points as the dependent variable, only poor QoL (DLQI > 10 points) (OR = 4.32; 95% CI: 1.25–14.88, $p = 0.021$)

remained an independently associated factor of anhedonia. The other studied parameters employed in this model were not significant contributors: age (OR = 0.99; 95% CI: 0.93–1.04, $p = 0.648$), male sex vs. female sex (OR = 1.98; 95% CI: 0.52–7.63, $p = 0.319$), severe HS (IHS4 > 10 points) (OR = 0.73; 95% CI: 0.22–2.37, $p = 0.597$), probable depression (PHQ-9 ≥ 10 points) (OR = 2.36; 95% CI: 0.48–11.57, $p = 0.291$), and probable anxiety (GAD-7 ≥ 8 points) (OR = 1.21; 95% CI: 0.24–6.18, $p = 0.816$).

4. Discussion

The concept of anhedonia has a long history in the study of human emotions and mental health. The term originates from the Greek words *an-* (without) and *hēdonē* (pleasure) and was introduced at the end of the 19th century by the French psychologist Théodule Ribot to describe a reduced capacity to experience pleasure.^{37,38} Initially, anhedonia was conceptualized as a core feature of depressive states.^{14,39} However, over time it has evolved into a broader construct encompassing motivational, consummatory, and social dimensions of pleasure.^{14,39} Contemporary research increasingly recognizes anhedonia as a transdiagnostic phenomenon that may arise in a variety of chronic somatic and psychiatric conditions.⁴⁰

In the general population, clinically relevant anhedonia assessed using the SHAPS has been reported relatively infrequently, affecting 5% to 11% of individuals.^{25,41} Against this background, elevated rates of anhedonia

Table 6. Correlations between anhedonia measures and depression and anxiety scales

Variable	PHQ-9	HADS-D	GAD-7	HADS-A
SHAPS	$r = 0.371; p < 0.001$	$r = 0.332; p < 0.001$	$r = 0.414; p < 0.001$	$r = 0.431; p < 0.001$
ACIPS total score	$r = -0.487; p < 0.001$	$r = -0.448; p < 0.001$	$r = -0.466; p < 0.001$	$r = -0.548; p < 0.001$
ACIPS anticipatory	$r = -0.474; p < 0.001$	$r = -0.468; p < 0.001$	$r = -0.454; p < 0.001$	$r = -0.550; p < 0.001$
ACIPS consummatory	$r = -0.470; p < 0.001$	$r = -0.416; p < 0.001$	$r = -0.451; p < 0.001$	$r = -0.521; p < 0.001$
ACIPS-ISI	$r = -0.431; p < 0.001$	$r = -0.402; p < 0.001$	$r = -0.421; p < 0.001$	$r = -0.489; p < 0.001$
ACIPS-GSI	$r = -0.445; p < 0.001$	$r = -0.417; p < 0.001$	$r = -0.439; p < 0.001$	$r = -0.512; p < 0.001$
ACIPS-SBMC	$r = -0.398; p < 0.001$	$r = -0.371; p < 0.001$	$r = -0.392; p < 0.001$	$r = -0.463; p < 0.001$
TEPS total score	$r = -0.323; p = 0.001$	$r = -0.293; p = 0.002$	$r = -0.332; p < 0.001$	$r = -0.423; p < 0.001$
TEPS anticipatory	$r = -0.373; p < 0.001$	$r = -0.313; p = 0.001$	$r = -0.371; p < 0.001$	$r = -0.450; p < 0.001$
TEPS consummatory	$r = -0.255; p = 0.007$	$r = -0.252; p = 0.008$	$r = -0.271; p = 0.004$	$r = -0.365; p < 0.001$

Note: Values are presented as Spearman correlation coefficients (r) with corresponding p -values.

Abbreviations: ACIPS: Anticipatory and consummatory interpersonal pleasure scale; AIS: Acceptance Illness Scale; DLQI: Dermatology Life Quality Index; GAD-7: Generalized Anxiety Disorder 7-item scale; GSI: General social interactions; HADS-A: Hospital Anxiety and Depression Scale-Anxiety; HADS-D: Hospital Anxiety and Depression Scale-Depression; HiSQOL: Hidradenitis Suppurativa Quality of Life; ISI: Intimate social interactions; PHQ-9: Patient Health Questionnaire-9; SBMC: Social bonding and making connections; SHAPS: Snaith-Hamilton Pleasure Scale; TEPS: Temporal Experience of Pleasure Scale.

observed in dermatological conditions highlight the substantial psychological burden associated with chronic skin diseases. In our previous study in patients with acne vulgaris, anhedonia was reported in approximately one-fifth of patients, indicating that even a condition often perceived as limited to adolescence may substantially interfere with hedonic functioning.¹⁹ In contrast, studies in patients suffering from chronic pruritus have demonstrated even higher levels of anhedonia, particularly in those experiencing severe and persistent itch, suggesting that continuous sensory discomfort may strongly impair the ability to experience pleasure.²¹

The present study demonstrates that anhedonia is particularly prevalent in HS, affecting more than one-third of patients. This proportion is markedly higher than that observed in acne and exceeds estimates reported for the general population.^{19,25,41} Such findings underscore the profound psychosocial impact of HS, a disease characterized not only by chronic inflammation, but also

by pain, malodor, scarring, and involvement of intimate body areas.^{1,2} Unlike acne, where sex-related differences in anhedonia severity have been reported,¹⁹ no such differences were observed in our HS cohort, suggesting a uniformly high psychological burden across sexes.

Importantly, anhedonia in HS was related to disease severity assessed using the IHS4, whereas no association was found with Hurley staging. This mirrors observations in acne,¹⁹ where current disease activity rather than long-standing disease characteristics appeared more relevant for psychological outcomes. In HS, objective disease severity may translate into greater functional limitations, social withdrawal, and impaired self-image, all of which may contribute to reduced hedonic capacity.

Comparisons with chronic pruritus further refine the interpretation of our findings. In chronic itch, anhedonia has been shown to correlate strongly with itch intensity, indicating a direct relationship between ongoing sensory

distress and pleasure impairment.²⁰ In contrast, anhedonia in HS was largely independent of pain and pruritus intensity, both across the entire disease course and in recent days. This suggests that in HS, anhedonia may be driven less by momentary physical symptoms and more by the cumulative emotional and social consequences of living with a severe, stigmatizing disease.

Consistent with previous findings in acne and chronic pruritus,^{19,20} anhedonia in HS was strongly associated with symptoms of depression and anxiety, as well as with impaired QoL and reduced illness acceptance. These associations extended across anticipatory, consummatory, and social domains of pleasure, highlighting the multidimensional nature of hedonic dysfunction in HS. Together, these results position anhedonia as one of the central psychological features of HS, reflecting not only mood disturbance, but a broader disruption of well-being.

An important and clinically relevant finding of the present study is that poor QoL emerged as the only factor independently associated with anhedonia. After adjustment for demographic variables, disease severity, and symptoms of depression and anxiety, impaired QoL remained the sole factor significantly associated with the occurrence of anhedonia. This observation suggests that anhedonia in HS may represent a downstream consequence of the overall burden imposed by the disease on daily functioning and well-being, rather than a direct effect of individual clinical or psychological parameters. One possible interpretation might be that factors such as disease severity, depressive symptoms, and anxiety may exert their influence on hedonic capacity indirectly, through their impact on QoL. Severe disease activity, emotional distress, and anxiety-related symptoms substantially disrupt everyday activities, social interactions, and self-perception, all of which are core components of QoL.¹⁵ In this context, reduced QoL may serve as an integrative construct capturing the cumulative effects of physical, emotional, and social impairment, thereby mediating the relationship between disease-related factors and anhedonia. This interpretation is consistent with the multidimensional nature of anhedonia observed in the present study. When daily life becomes persistently restricted and burdensome, opportunities for rewarding experiences may diminish, potentially reducing anticipation of pleasure and enjoyment of social and interpersonal activities. Although the cross-sectional design of this study precludes definitive conclusions regarding directionality, the finding that QoL, rather than disease severity or psychiatric symptoms, is the only factor independently associated with anhedonia underscores the importance of patient-reported outcomes in understanding psychological functioning in

HS. Furthermore, the relationships between anhedonia, QoL, depressive symptoms, anxiety, and disease severity are likely to be complex and bidirectional. While poor QoL was independently associated with anhedonia in the present model, it cannot be determined whether impaired QoL contributes to the development of anhedonia, whether anhedonia itself worsens patient-reported QoL, or whether both reflect shared underlying psychosocial and disease-related mechanisms. Longitudinal studies with repeated assessments of hedonic functioning, psychological distress, QoL, and disease activity would be required to clarify the temporal sequence and potential causal pathways underlying these associations. Nevertheless, from a clinical perspective, our findings highlight the potential value of interventions aimed at improving overall QoL—through effective disease control, psychosocial support, and patient-centered care—as a means of mitigating anhedonia and its consequences.

Several limitations of this study should be acknowledged. First, its cross-sectional design does not allow for conclusions regarding causality between anhedonia and clinical or psychological variables. Second, the study was conducted in two single tertiary referral centers, which may limit the generalizability of the findings to the broader population of patients with HS. Third, although validated self-report questionnaires were used, subjective assessments may be influenced by reporting bias, and psychiatric diagnoses were not confirmed using structured clinical interviews. In addition, the absence of a healthy control group precludes direct comparison of anhedonia prevalence between patients with HS and the general population. Finally, longitudinal studies are needed to confirm and extend our results.

5. Conclusion

Our findings position anhedonia as a clinically relevant and multifaceted phenomenon in HS. Beyond its role as a symptom of depression, anhedonia appears to reflect a broader disruption of emotional and social functioning associated with severe disease. Recognizing and addressing anhedonia may therefore be essential for comprehensive patient care, complementing traditional approaches focused on controlling inflammation and physical symptoms.

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Conflict of interest

The authors declare no conflict of interest.

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Ethics approval and consent to participate

Approval for the research project was granted by the local ethics committee (Ethics Committee of Lower Silesian Medical Chamber, Wroclaw, Poland [decision number: 12/BNBP/2025]). Written informed consent was obtained from all participants before inclusion in the study.

Consent for publication

All participants provided consent for their data to be published.

Availability of data

Data are available on request from the corresponding authors.

Further disclosure

ChatGPT-5.5 was used only for language polishing and improving readability.

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