

Alexithymia in Melanoma Patients: A Cross-Sectional Study of Psychological Distress, Illness Acceptance, and Quality of Life

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Abstract

Purpose

Alexithymia is characterized by difficulty identifying and describing feelings and by externally oriented thinking. Although emotional distress is common in melanoma, alexithymia has not been adequately characterized in this population.

Methods

This cross-sectional study included 139 adults with histologically confirmed melanoma, who had complete Toronto Alexithymia Scale-20 (TAS-20) data. Depression, anxiety, illness acceptance, and dermatology-related quality of life (QoL) were assessed with the Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder-7 (GAD-7), Hospital Anxiety and Depression Scale (HADS), Acceptance of Illness Scale (AIS), and Dermatology Life Quality Index (DLQI).

Results

Definite alexithymia was identified in 42 patients (30.2%), intermediate alexithymia in 45 (32.4%), and no alexithymia in 52 (37.4%). The mean TAS-20 score was 54.62 ± 12.19 points. Prevalence and domain scores did not differ by sex, and TAS-20 scores did not vary across AJCC stages. After multiplicity correction, no associations were found with age, time since diagnosis and AJCC stage. Higher total TAS-20 scores correlated with worse DLQI ($r = 0.293$), lower AIS ($r = -0.312$), greater depression (PHQ-9 $r = 0.285$; HADS-D $r = 0.250$), and greater anxiety (GAD-7 $r = 0.331$; HADS-A $r = 0.232$). Difficulty identifying feelings showed the strongest associations, particularly with anxiety (GAD-7 $r = 0.494$) and illness acceptance (AIS $r = -0.401$). Externally oriented thinking was not significantly related to the assessed clinical or psychosocial variables.

Conclusions

Alexithymic features were frequent in patients with melanoma and were linked mainly to psychological distress, impaired QoL, and poorer illness acceptance rather than to objective clinical characteristics. Assessment of emotional-processing difficulties may complement routine psycho-oncological screening.

Introduction

Melanoma is a potentially life-threatening malignancy whose global burden has continued to increase. Earlier diagnosis and major advances in systemic therapy have improved outcomes, yet the disease remains associated with metastatic potential, intensive surveillance, and uncertainty about recurrence or

progression [1, 2]. Consequently, the experience of melanoma often extends well beyond the initial diagnostic and treatment period.

The psychological consequences of melanoma are increasingly recognized. Patients may experience anxiety, depressive symptoms, fear of recurrence, concerns about prognosis, treatment-related burden, and changes in daily functioning or quality of life (QoL) [3–5]. These difficulties are not confined to advanced disease. Clinically meaningful distress may also occur after treatment of localized melanoma and during long-term follow-up. Objective tumor characteristics therefore provide only a partial account of how an individual adjusts to the diagnosis.

Alexithymia represents a specific aspect of emotional functioning. It comprises difficulty identifying internal emotional states, difficulty communicating feelings to others, and a tendency to focus attention on concrete external events rather than inner experience [6, 7]. The 20-item Toronto Alexithymia Scale (TAS-20) operationalizes these dimensions as difficulty identifying feelings (DIF), difficulty describing feelings (DDF), and externally oriented thinking (EOT). In population-based research, definite alexithymia affects approximately one in ten adults, although prevalence varies with age, sex, educational level, perceived health, and depressive symptoms [8, 9].

In the setting of cancer, impaired emotional awareness may complicate communication, coping, and adaptation to uncertainty. Studies involving mixed oncological populations and breast cancer have linked alexithymia, particularly DIF and DDF, with depression, anxiety, intrusive thoughts, reduced resilience, and lower perceived support [10–12]. Similar relationships have been reported in chronic dermatological diseases, where alexithymia may accompany impaired QoL and broader psychosocial burden [13–16]. However, direct evidence in melanoma is scarce.

The present study was designed to characterize alexithymia in melanoma patients and to explore its relationship with demographic and clinical factors, depression, anxiety, illness acceptance, and dermatology-related QoL. We expected alexithymic features to be frequent and to show stronger associations with psychological adaptation and distress than with clinical stage of melanoma.

Materials and Methods

Study Design and Participants

A cross-sectional observational study was performed from June 2025 to February 2026. Consecutive adults with histologically confirmed melanoma were recruited during routine outpatient appointments at two tertiary oncology centers in Poland: the Maria Skłodowska-Curie National Research Institute of Oncology, Gliwice Branch, and the Lower Silesian Oncology, Pulmonology and Hematology Center in Wrocław.

A total of 191 patients were approached, and 162 agreed to participate. Complete TAS-20 questionnaires were available for 139 participants and all analyses of alexithymia were restricted to these complete

cases. Demographic and clinical information was collected using a structured questionnaire. Variables included age, sex, time since diagnosis and melanoma stage. Disease stage was classified according to the American Joint Committee on Cancer (AJCC) system [2]. Finally, the study cohort included 57 women and 82 men. 34 patients had AJCC stage I disease, 38 stage II, 31 stage III, and 36 stage IV. Characteristics of study group are summarized in Table 1.

Table 1
Characteristics of the study cohort.

Characteristic	Category / statistic	Result
Age, years	Mean ± SD (range)	59.8 ± 13.7 (29–92)
Sex	Male	82 (59.0%)
	Female	57 (41.0%)
AJCC stage	I	34 (24.5%)
	II	38 (27.3%)
	III	31 (22.3%)
	IV	36 (25.9%)
Time since diagnosis, weeks	Median (IQR)	17 (9–48)
Values are n (%). AJCC - American Joint Committee on Cancer; IQR - interquartile range; SD - standard deviation.		

Participation was voluntary and anonymous. Written informed consent was obtained from every participant. The study was conducted in accordance with the Declaration of Helsinki and was approved by the Ethics Committee of the Lower Silesian Chamber of Physicians and Dentists (decision no. 13/BNBO/2025; 11 June 2025).

Assessment of Alexithymia

Alexithymia was assessed with the TAS-20, a 20-item self-report instrument scored on a five-point Likert scale [6, 7]. Total scores range from 20 to 100 points, with higher values reflecting more pronounced alexithymic features. The questionnaire yields three domain scores: DIF, DDF, and EOT. Following established thresholds, scores of 61 points or higher were classified as definite alexithymia, scores from 52 to 60 points as intermediate alexithymia, and scores of 51 points or lower as no alexithymia.

Assessment of Quality of Life and Illness Acceptance

Dermatology-related QoL was measured with the Dermatology Life Quality Index (DLQI), a 10-item questionnaire covering symptoms and feelings, daily activities, leisure, work or school, personal

relationships, and treatment during the preceding week [17]. The total score ranges from 0 to 30 points; higher scores indicate greater impairment.

Psychological adaptation to melanoma was evaluated with the Acceptance of Illness Scale (AIS) [18, 19]. The AIS contains eight statements concerning disease-related limitations, dependence, and reduced self-esteem. Each statement is rated from 1 to 5 points, producing a total score from 8 to 40 points. Higher scores indicate greater acceptance and more favorable adaptation to the illness.

Depression and Anxiety

Depressive symptoms were assessed using the Patient Health Questionnaire-9 (PHQ-9) and the depression subscale of the Hospital Anxiety and Depression Scale (HADS-D) [20, 21]. Anxiety symptoms were measured using the Generalized Anxiety Disorder-7 (GAD-7) and the anxiety subscale of HADS (HADS-A) [21, 22]. Higher scores on each instrument denote greater symptom severity. The use of both DSM-oriented measures (PHQ-9 and GAD-7) and HADS provided complementary estimates of emotional distress while reducing reliance on a single questionnaire.

Statistical Analysis

Statistical analyses were performed with IBM SPSS Statistics, version 26.0. Distributional assumptions were evaluated using the Shapiro-Wilk test. Continuous data are presented as mean $\pm$ standard deviation (SD) or median with interquartile range (IQR), according to distribution; categorical data are reported as numbers and percentages. Sex differences in alexithymia categories were examined with the chi-square test. TAS-20 total and domain scores were compared between women and men using the Mann-Whitney U test and across AJCC stages using the Kruskal-Wallis test. Associations with clinical and psychosocial variables were evaluated using Spearman rank correlation coefficients. To account for multiple testing, Benjamini-Hochberg false discovery rate adjustment was applied to the 40 correlations (10 variables multiplied by four TAS-20 outcomes). Raw p-values and adjusted q-values are reported; $q < 0.05$ was considered statistically significant after correction.

Results

Prevalence of Alexithymia

Among the whole study group 42 patients (30.2%) met the threshold for definite alexithymia and 45 (32.4%) were classified as intermediate. The remaining 52 patients (37.4%) had scores in the non-alexithymic range. Thus, 62.6% of our patient's cohort had either definite or intermediate alexithymic features. The distribution did not differ between women and men ($p = 0.791$). Definite alexithymia occurred in 33.3% of women and 28.0% of men, intermediate scores were present in 31.6% and 32.9%, respectively (Fig. 1).

Alexithymia Scores by Sex and AJCC Stage

The mean TAS-20 total score was 54.62 ± 12.19 points. Mean domain scores were 15.32 ± 5.82 points for DIF, 12.31 ± 4.40 points for DDF, and 26.99 ± 5.98 points for EOT. Total and domain scores were comparable in women and men. Likewise, no statistically significant differences were observed across AJCC stages for TAS-20 total score or any domain (Table 2).

Table 2
TAS-20 total and domain scores according to sex and AJCC stage.

Group	TAS-20	DIF	DDF	EOT
Whole group	54.62 ± 12.19	15.32 ± 5.82	12.31 ± 4.40	26.99 ± 5.98
Sex				
Females	54.49 ± 13.93	16.02 ± 5.94	12.12 ± 4.72	26.35 ± 6.39
Males	54.71 ± 10.91	14.83 ± 5.72	12.44 ± 4.18	27.44 ± 5.67
p-value	.981	.306	.396	.224
AJCC stage				
Stage I	57.29 ± 10.88	15.94 ± 5.16	13.24 ± 4.29	28.12 ± 5.38
Stage II	52.34 ± 10.08	14.92 ± 5.26	11.68 ± 3.86	25.74 ± 5.23
Stage III	55.13 ± 9.99	14.81 ± 5.65	11.71 ± 4.36	28.61 ± 5.43
Stage IV	54.06 ± 16.38	15.58 ± 7.13	12.61 ± 5.02	25.86 ± 7.27
p-value	.245	.824	.492	.113
Data are mean $\pm$ SD. TAS-20–20-item Toronto Alexithymia Scale; AJCC - American Joint Committee on Cancer; DDF - difficulty describing feelings; DIF - difficulty identifying feelings; EOT - externally oriented thinking				

Associations with Clinical and Psychosocial Variables

Correlation analysis showed no evidence that TAS-20 total or domain scores were related to age, time since diagnosis and AJCC stage. In contrast, total alexithymia was associated with all assessed psychosocial outcomes. Higher TAS-20 scores accompanied greater QoL impairment (DLQI), poorer illness acceptance (AIS), and more severe depressive and anxiety symptoms on both pairs of psychological measures (Table 3).

Table 3
Spearman correlations between alexithymia and clinical or psychosocial variables.

Variable	TAS-20	DIF	DDF	EOT
Age	-0.035 (p=.704; q=.804)	-0.096 (p=.291; q=.523)	-0.065 (p=.472; q=.651)	0.143 (p=.116; q=.231)
Time since diagnosis	-0.057 (p=.525; q=.665)	0.004 (p=.965; q=.980)	-0.075 (p=.401; q=.617)	-0.087 (p=.333; q=.554)
AJCC stage	-0.072 (p=.396; q=.617)	-0.049 (p=.564; q=.665)	-0.052 (p=.546; q=.665)	-0.049 (p=.566; q=.665)
Quality of life (DLQI)	0.293 (p=.001; q=.003)	0.288 (p=.001; q=.003)	0.247 (p=.005; q=.013)	0.093 (p=.301; q=.523)
Illness acceptance (AIS)	-0.312 (p<.001; q=.002)	-0.401 (p<.001; q<.001)	-0.268 (p=.002; q=.007)	-0.002 (p=.980; q=.980)
Depression (PHQ-9)	0.285 (p=.001; q=.003)	0.386 (p<.001; q<.001)	0.305 (p<.001; q=.002)	-0.068 (p=.434; q=.621)
Depression (HADS-D)	0.250 (p=.003; q=.010)	0.367 (p<.001; q<.001)	0.306 (p<.001; q=.002)	-0.157 (p=.067; q=.142)
Anxiety (GAD-7)	0.331 (p<.001; q=.001)	0.494 (p<.001; q<.001)	0.196 (p=.023; q=.054)	-0.051 (p=.557; q=.665)
Anxiety (HADS-A)	0.232 (p=.006; q=.016)	0.345 (p<.001; q<.001)	0.188 (p=.027; q=.061)	-0.067 (p=.435; q=.621)

Values are Spearman's r coefficients with raw p-values and Benjamini-Hochberg adjusted q-values (40 tests). q < 0.05 indicates significance after correction. n - the number of complete pairs. TAS-20 - 20-item Toronto Alexithymia Scale; DIF - difficulty identifying feelings; DDF - difficulty describing feelings; EOT - externally oriented thinking; AJCC - American Joint Committee on Cancer; DLQI - Dermatology Life Quality Index; AIS - Acceptance of Illness Scale; PHQ-9 - Patient Health Questionnaire-9; GAD-7 - Generalized Anxiety Disorder-7; HADS-A/HADS-D - Hospital Anxiety and Depression Scale anxiety/depression subscales

The pattern differed across TAS-20 domains. DIF displayed the broadest and strongest relationships, including correlations with DLQI ($r = 0.288$; $q = 0.003$), AIS ($r = -0.401$; $q < 0.001$), PHQ-9 ($r = 0.386$; $q < 0.001$), HADS-D ($r = 0.367$; $q < 0.001$), GAD-7 ($r = 0.494$; $q < 0.001$), and HADS-A ($r = 0.345$; $q < 0.001$). DDF remained significantly associated with DLQI, AIS, PHQ-9, and HADS-D after correction. Its correlations with GAD-7 and HADS-A did not meet the adjusted threshold ($q = 0.054$ and $q = 0.061$, respectively). EOT was not significantly associated with any clinical or psychosocial variable (Table 3).

Discussion

Our study indicates that alexithymic features are common among adults receiving follow-up for melanoma. Nearly one third of participants met the conventional threshold for definite alexithymia, and almost two thirds had either definite or intermediate scores. Equally important, alexithymia was not distributed according to sex or AJCC stage and showed no measurable relationship with age or time since diagnosis. Its principal correlates were instead depression, anxiety, impaired dermatology-related QoL, and limited acceptance of melanoma.

The prevalence of definite alexithymia in our cohort was substantially higher than the approximately 10% reported in a large population-based study [8]. It also exceeded the 18.1% described in a study of women with early-stage breast cancer [12]. Comparisons between studies require caution because prevalence depends on sample composition, cancer type and stage, timing of assessment, cultural context, and the handling of borderline scores. Nevertheless, the combined proportion of definite and intermediate alexithymia in our sample suggests that difficulties in emotional awareness and expression are relevant to a large subgroup of patients with melanoma.

Previous oncological research supports a close relationship between alexithymia and negative affect. In mixed cancer populations, alexithymia has been linked to depressive and anxiety symptoms, intrusive thoughts, maladaptive cognitive emotion regulation, and reduced resilience [10, 11]. Our findings extend this pattern to melanoma and remain consistent across two independent measures of depression and two measures of anxiety. The use of false discovery rate correction further reduces the likelihood that the principal associations arose from the number of correlations examined.

The domain-level results are clinically informative. DIF was associated with every psychosocial outcome and showed the strongest coefficient with GAD-7. DDF demonstrated a similar but somewhat narrower pattern, whereas EOT was unrelated to the clinical and psychosocial variables. This concentration of associations within DIF and DDF resembles broader TAS-20 research, in which these domains commonly track negative affect more closely than EOT [7, 23]. It also warrants careful interpretation. Difficulty recognizing emotional arousal can intensify distress and obstruct coping, but current mood symptoms may simultaneously increase self-reported problems in identifying feelings. The cross-sectional data cannot establish the direction of these relationships or determine whether alexithymia functioned primarily as a stable trait, a state-dependent response to cancer, or a combination of both.

The inverse relationship with illness acceptance is a notable finding. Adaptation to melanoma requires patients to integrate a potentially threatening diagnosis into everyday life, tolerate uncertainty, engage in surveillance, and communicate concerns to clinicians and close others. When emotional states are difficult to recognize or describe, distress may be experienced as diffuse tension or somatic discomfort rather than as an identifiable response that can be processed or discussed. This mechanism could hinder acceptance and adaptive coping. The particularly strong correlation between AIS and DIF is compatible with this interpretation, although longitudinal or mediation analyses are needed before a causal pathway can be proposed.

Alexithymia was also related to greater DLQI impairment. The DLQI captures symptoms and feelings, daily activities, social and intimate relationships, work, and treatment burden [17]. Deficits in emotional communication may amplify the impact of melanoma within these domains by limiting help-seeking, complicating interpersonal support, or making consultations less responsive to the patients actual concerns. Studies in dermatology have similarly connected alexithymia with poorer QoL and social functioning [13–15].

No relationship was observed between alexithymia and AJCC stage, including in both group comparisons and correlation analysis. This finding argues against using disease stage as a proxy for emotional-processing needs. A patient with localized melanoma may experience marked uncertainty or difficulty articulating distress, while an individual with advanced disease may communicate and regulate emotions effectively. Psycho-oncological assessment should therefore be guided by patient-reported functioning rather than reserved only for those with clinically advanced disease [23].

From a practical perspective, the TAS-20 is not a diagnostic instrument for a psychiatric disorder, but it may identify patients who require a different style of communication or additional psychological assessment. Clinicians may need to use concrete questions, allow more time for patients to label emotional and bodily experiences, confirm understanding, and actively explore concerns that are not volunteered spontaneously. Referral to psycho-oncology may be particularly relevant when high alexithymia scores coexist with depression, anxiety, poor illness acceptance, or QoL impairment. Interventions that strengthen emotional awareness and expression are potentially useful, but their effectiveness in melanoma must be evaluated prospectively.

Several limitations should be considered. First, the cross-sectional design prevents conclusions about temporal sequence or causality. Second, no healthy control group or comparison group with another malignancy was included. Third, complete TAS-20 data were available for 139 of 162 included patients, which may have introduced selection bias. Fourth, all psychological variables were self-reported, and conceptual overlap between TAS-20 domains and symptoms of anxiety or depression may have inflated some correlations [24, 25]. Fifth, the DLQI is dermatology-specific and may not capture all melanoma-related concerns, such as fear of recurrence, treatment toxicity, or existential distress. Treatment status, metastatic sites, comorbidity, social support, coping style, prior psychiatric history, and psycho-oncological care were not included in the present analyses. Finally, subgroup sizes across AJCC stages

were modest, and the Polish tertiary-center setting may limit generalizability. Future studies should incorporate longitudinal assessment, oncology-specific QoL measures, control groups, and multivariable models that evaluate whether alexithymia contributes independently to psychological outcomes.

Conclusions

Definite alexithymia affected 30.2% of adults with melanoma, and an additional 32.4% had intermediate scores. Emotional-processing difficulties were unrelated to sex, AJCC stage, time since diagnosis, but were consistently associated with depression, anxiety, poorer illness acceptance, and reduced QoL. The strongest relationships involved difficulty identifying feelings, while externally oriented thinking showed no significant associations. These findings support the inclusion of emotional-processing assessment within patient-centered melanoma care and justify prospective research on its clinical and therapeutic relevance.

Statements & Declarations

Declarations

Competing Interests:

The authors have no relevant financial or non-financial interests to disclose.

Author Contributions

All authors contributed to the study conception and design. Material preparation and data collection and were performed mainly by Grażyna Kamińska-Winciorek, Marcin Ziętek and Marta Szepietowska; all authors contributed to the analysis of the data; statistical analysis was conducted by Piotr K Krajewski. The study was supervised by Przemysław Paca, Łukasz Matusiak and Jacek C Szepietowski. The first draft of the manuscript was written by Marta Szepietowska and Jacek C Szepietowski, all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Ethics approval:

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of of the Lower Silesian Chamber of Physicians and Dentists (decision no. 13/BNBO/2025; 11 June 2025).

Consent to participate:

Informed consent was obtained from all individual participants included in the study.

Consent to publish:

The authors affirm that human research participants provided informed consent for publication of their data.

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Author Contribution

All authors contributed to the study conception and design. Material preparation and data collection and were performed mainly by Grażyna Kamińska-Winciorek, Marcin Ziętek and Marta Szepletowska; all authors contributed to the analysis of the data; statistical analysis was conducted by Piotr K Krajewski. The study was supervised by Przemysław Paca, Łukasz Matusiak and Jacek C Szepletowski. The first draft of the manuscript was written by Marta Szepletowska and Jacek C Szepletowski, all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Data availability statements:

Data is available on reasonable request from the corresponding author.

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Figures

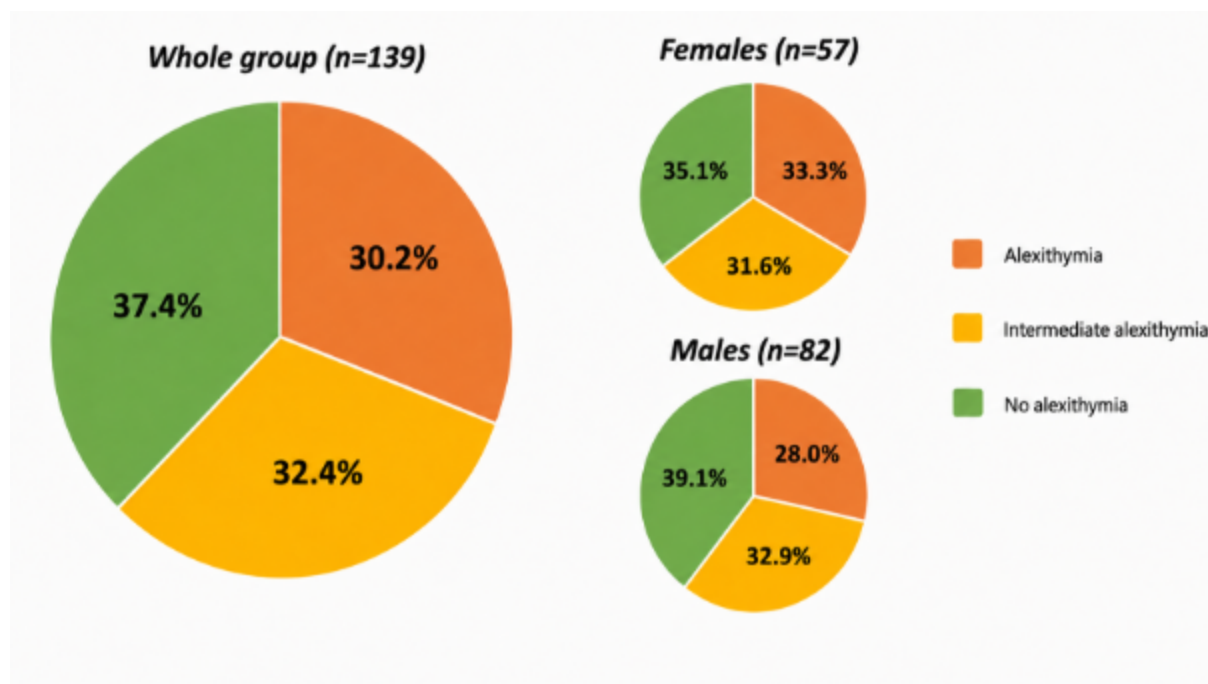


Figure 1

Alexithymia prevalence in melanoma patients.