Effect of Nail Disorders on Quality of Life Scale Scores

A Prospective, Cross-sectional Study from a Tertiary Referral Center

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Background: To investigate the relationships among nail disorders, various clinical factors, and commonly used quality of life scales.

Methods: A prospective cross-sectional study was conducted on 188 patients older than 18 years who applied to the Dermatology and Venereology Department of Ufuk University Hospital (Ankara, Turkey). The Turkish Quality of Life instrument, the Hospital Anxiety and Depression Scale, and the 36-Item Short-Form Health Survey were used for the analyses. Eight groups were formed based on 1) sex, 2) age (18–45 years, >45 years), 3) duration of nail disease (≤1 year, >1 year), 4) number of affected nails (1, 2, ≥3), 5) type of nail disease (nail thickening, ingrown toenail, pincer nail, and other nail diseases), 6) presence of onychomycosis, 7) fingernail involvement, and 8) pain score (0–5, 6–10), and the quality of life scales were compared between these groups. In addition, correlation analyses were performed between age, number of affected nails, duration of disease, presence of onychomycosis, chronic diseases and medications, and body mass index and the quality of life scale scores.

Results: Nail disorders were associated with decreased quality of life in affected individuals. Moreover, age, duration of disease, type of nail disorder, body mass index, comorbid conditions, and pain scores had significant effects on quality of life scale scores.

Conclusions: Management of nail disorders is challenging, and generally, a long period is necessary to achieve favorable outcomes. Both physcians and patients should be persistent during the treatment process. In addition, emotional and social support should be provided to patients. (J Am Podiatr Med Assoc 114(3), 2024; doi:10.7547/21-208)

Nail disorders are relatively common in dermatologic practice, and they are associated with decreased quality of life.[1] They may cause pain, functional loss, and cosmetic problems in affected individuals. In modern medicine, the main goal of physicians should be improving patients' life standards along with treating their diseases. Considering the increasing importance of body perception and self-esteem for patients in recent years, it is crucial for clinicians to assess the impact of diseases on quality of life objectively. Therefore, many scales have been developed and have been widely used in routine clinical practice for years. Because nail disorders are one of the most challenging issues in podiatric medicine and dermatology, their effect on quality of life has been investigated in various studies. However, no consensus could be reached on subjects such as the optimal scale, clinical risk factors, and sociodemographic features. For this reason, high-quality studies on various populations with a high number of parameters are necessary to obtain more reliable results.

Objective determination of clinical features of the quality of life of patients with nail disorders may help physicians establish more effective management protocols. Furthermore, it may give valuable information for achieving an individualized approach in this population. Considering the importance of a healthy toenail for podiatric medicine, assessment of quality of life may help physicans give extra attenton to foot care for selected individuals.

The aim of the present study was to investigate the relationships among nail disoreders, various clinical factors, and commonly used quality of life scales.

Materials and Methods

Selection of Patients and Study Design

The prospective cross-sectional study was conducted on patients older than 18 years who applied

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to the Dermatology and Venereology Department of Ufuk University Hospital (Ankara, Turkey) between November 15, 2019, and May 1, 2021. All of the patients who gave the required written permission to participate in the study were included. The study protocol was approved by the Turkish Ministry of Health Ankara City Hospital Ethics Committee. Patients with mental retardation, illiteracy, and active psychiatric treatment were excluded from the study. First, clinical characteristics and demographic features were evaluated. Age, sex, education level, smoking status, body mass index (BMI), duration of disease, type of nail disease, chronic diseases and medications, presence of onychomycosis, involved area (toenail, fingernail, or both), presence of pain, and pain score according to a visual analog scale were evaluated for each participant. After assessing the sociodemographic and clinical characteristics of the patients, the Turkish Quality of Life (QOL) instrument, the Hospital Anxiety and Depression Scale (HADS), and the 36-Item Short-Form Health Survey (SF-36) were completed under the supervision of the investigator.

Quality of life scales were compared between groups established based on various demographic and clinical features. Eight groups were formed based on 1) sex 2) age (18–45 years and >45 years), 3) duration of nail disease (≤1 year and >1 year), 4) number of affected nails (1, 2, and ≥3), 5) type of nail disease (nail thickening, ingrown toenail, pincer nail, and other nail diseases), 6) presence of onychomycosis, 7) fingernail involvement, and 8) pain score (0–5 and 6–10). The age groups were established according to the 50th percentile value of the study populations. The 50th percentile value was 45 years in the present study; thus, two age groups were found as 18 to 45 years and older than 45 years.

Correlation analyses were performed between age, number of affected nails, duration of disease, presence of onychomycosis, chronic diseases and medications, and BMI and the quality of life scale scores.

Scales

Turkish Quality of Life. The QOL was developed in 2005 by Gurel et al. This scale consists of two main domains evaluating the psychosocial and physical aspects of the patients. Psychosocial domain was divided into three dimensions as cognitive, social, and emotional, whereas physical domain was divided into three dimentions as physical discomfort or limitations in physical function, sexual life and daily activities. It consists of 11 questions, and the previous 1 month is evaluated.[2] All of the questions are expressed postively and assigned a 5-point Likert scale score of 4 for always, 3 for often, 2 for sometimes, 1 for rarely, 0 for never, with "always" representing the highest score and poorest quality of life. The lower the score, the better the quality of life. The total possible score ranged from 0 to 44.

Hospital Anxiety and Depression Scale. The HADS was first developed in 1983 by Zigmond and Snaith, and its validity and reliability have been proved.[3] It consists of 14 questions, including anxiety (HADS-A) and depression (HADS-D) subscales. Answers are evaluated with a 4-point Likert scale and are scored between 0 and 3. In the Turkish version of the HADS, the cutoff points are 10 for the anxiety subscale and 7 for the depression subscale.[4] Therefore, the HADS is valid and reliable in terms of screening depression and anxiety symptoms.

36-Item Short-Form Health Survey. The SF-36, developed by the RAND Corporation to evaluate quality of life, is a self-rating scale with generic criteria.[5] This questionnaire consists of 36 items that measure eight dimensions: physical functioning (PF), social functioning (SF), role limitations due to physical problems (RP), role limitations due to emotional problems (RE), mental health (MH), general health (GH), bodily pain (BP), and vitality (energy/fatigue) (VT). The evaluation is made with a Likert-type scale, except for some items, and the last 4 weeks are taken into consideration. Subscales evaluate health with scores between 0 (poor health) and 100 (good health).

Visual Analog Scale. The visual analog scale is the most commonly used pain scale in clinical practice. The degree of pain was assessed according to the patient's perception, ranging from 0 (lowest) to 10 (highest).[6]

Statistical Analyses

Statistical analyses were performed with a statistical software program (IBM SPSS Statistics for Windows, Version 22.0; IBM Corp, Armonk, New York). Mean ± SD values are given for the normally distributed descriptive parameters. The Student t test was performed for comparing the mean values between the groups. Categorical variables are presented with numbers and percentages. The χ^2 test was used to compare categorical variables. The Pearson correlation test was used for correlation

analyses. A two-tailed $P < .05$ was regarded as statistically significant.

Results

Demographic and clinical characteristics of the 188 patients (133 females and 55 males) included in the study are presented in Table 1. A comparison of mean QOL, HADS-A, HADS-D, and SF-36 values among the study groups based on sex, age, disease duration, number of affected nails, type of nail disease, presence of onychomycosis, fingernail involvement, and pain score is shown in Table 2. Statistically significantly worse quality of life scores were observed in female patients for QOL, HADS-A, HADS-D, SF, and RE than in males. The younger group had significantly better scores except for HADS-A, HADS-D, and BP ($P < .05$). Longer disease duration was associated with worse scores except for PF, RP, VT, and BP ($P < .05$). Patients with three or more affected nails had significantly worse scores for QOL, GH, SF, and VT ($P < .05$). Pincer nail deformity was associated with worse scores for most of the scales ($P < .05$). Significantly worse scores for QOL, PF, RP, GH, VT, SF, and RE were observed in patients with onychomycosis ($P < .05$). Fingernail involvement was associated with a significantly worse score for QOL, SF, and RE ($P < .05$). On the other hand, significantly worse scores for BP and GH were observed in toenail involvement. Finally, patients with higher pain scores also had worse quality of life scores ($P < .05$).

Statistically significant correlations between age, number of affected nails, duration of disease, chronic diseases and medications, presence of onychomycosis, and BMI and the quality of life scale scores are shown in Table 3. Negative moderate correlations were observed between age and quality of life scales except for HADS-A, HADS-D, and BP. The number of affected nails was found to be correlated with worse scores except for HADS-D and BP. Statistically significant weak negative correlations were observed between duration of disease and PF, MH, SF, VT, GH, and RE. On the other hand, significant weak-to-moderate positive correlations were found for QOL, HADS-D, and HADS-A. Positive weak correlations were observed for the presence of onycomycosis, QOL, and chronic diseases and medications.

Furthermore, negative weak correlations were found between PF, RP, SF, VT, GH, and RE and chronic disease or systemic medication use. Presence of onychomycosis and BMI levels were positively correlated. Negative weak correlations were observed between presence of onychomycosis and PF, MH, RE, VT, GH, and RP. Finally, RP, PF, GH, VT, SF, RE, and BP had statistically significantly weak correlations with BMI.

Table 1. Demographic and Clinical Characteristics of the 188 Study Patients with Nail Disease

Characteristic	Patients (No. [%])
Sex	
Female	133 (70.7)
Male	55 (29.3)
Age group	
18–45 y	92 (48.9)
>45 y	96 (51.1)
Smoking	
Yes	45 (23.9)
No	124 (66.0)
Former smoker	19 (10.1)
Graduation	
Elemantary	25 (13.3)
High school	47 (25.0)
University and postgraduate	116 (61.7)
BMI	
Underweight and normal (BMI <25)	74 (39.4)
Overweight and obesity (BMI ≥25)	114 (60.6)
Chronic diseases and medications	
Cardiovascular and metabolic diseases	44 (23.4)
Thyroid dysfunction	16 (8.5)
Rheumatologic disease	7 (3.7)
Venous insufficiency	10 (5.3)
Other dermatologic diseases (psoriasis, lichen planus, rosacea, urticaria)	57 (30.3)
Asthma	3 (1.6)
Others	10 (5.3)
Duration of disease	
≤1 y	55 (29.3)
>1 y	133 (70.7)
Nail diseases	
Nail thickening (subungual hyperkeratosis, onychogryphosis, acquired/congenital malalignment of the great toenail)	47 (25.0)
Ingrown toenail	82 (43.6)
Pincer nail	25 (13.3)
Other nail diseases (nail changes in dermatologic and systemic diseases, benign nail tumors)	34 (18.1)
Presence of onychomycosis	
Yes	115 (61.2)
No	73 (38.8)
Involved area	
Fingernails	33 (17.6)
Toenails	155 (82.4)
Both	6 (3.1)
Pain score (VAS)	
0–5	98 (52.1)
5–10	90 (47.9)

BMI, body mass index; VAS, visual analog scale.

Table 2. Quality of Life Scale Scores by Study Group

		HADS		SF-36							
Group	QOL	Anxiety	Depression	PF	RP	BP	GH	VT	SF	MH	RE
Sex											
Female (n = 133, 70.7%)	23.77 ± 6.49	4.29 ± 2.18	4.06 ± 2.5	83.2 ± 12.5	71.8 ± 22.8	69.19 ± 20.6	73.58 ± 20.7	71.48 ± 16.7	62.5 ± 22.09	73.9 ± 14.85	65.9 ± 26.6
Male (n = 55, 29.3%)	20.9 ± 6.43	3.29 ± 1.87	3.29 ± 1.87	87.01 ± 12.38	75.8 ± 21.1	71.6 ± 23.6	79.9 ± 21.3	76.4 ± 17.9	74.1 ± 20.7	78.01 ± 14.97	74.8 ± 26.1
P value	.007[a]	.002[a]	.003[a]	.06	.26	.49	.061	.08	.001[a]	.08	.034[a]
Age groups											
18–45 (n = 92, 48.9%)	20.96 ± 6.78	3.86 ± 2.06	3.36 ± 2.34	90.54 ± 9.95	83.85 ± 17.1	72.3 ± 23.5	86.19 ± 14.3	80.7 ± 16.11	72.3 ± 20.7	79.7 ± 14.8	77.8 ± 24.8
>45 (n = 96, 51.1%)	24.79±5.84	4.10 ± 2.21	4.06±2.61	78.43 ± 11.9	62.7 ± 22.02	67.6 ± 19.2	65.26 ± 20.7	65.6 ± 14.8	60.02 ± 22.1	70.82 ± 13.7	59.7 ± 25.5
P value	.001[a]	.45	.058	<.001[a]	<.001[a]	.14	<.001[a]	<.001[a]	<.001[a]	<.001[a]	<.001[a]
Duration of nail disease											
≤1 y (n = 55, 29.3%)	20.47 ± 7.6	2.9 ± 2.01	2.58 ± 2.37	86.09 ± 12.3	76.3 ± 19.49	70.2 ± 21.85	80.6 ± 17.7	76.8 ± 18.93	71.36 ± 23.9	81.2 ± 14.7	75.75 ± 26.8
>1 y (n = 133, 70.7%)	23.9 ± 5.86	4.4 ± 2.03	4.19 ± 2.4	83.64 ± 12.6	71.7 ± 23.42	69.83 ± 21.48	73.32 ± 21.5	71.4 ± 16.25	63.81 ± 21.3	72.71 ± 14.4	65.7 ± 26.25
P value	.003[a]	<.001[a]	<.001[a]	.24	.19	.36	.018[a]	.06	.045[a]	<.001[a]	.018[a]
No. of nails affected											
1 (n = 47, 25.0%)	21.08 ± 5.87	4.29 ± 2.14	3.70 ± 2.3	86.59 ± 11.7	76.59 ± 16.5	70.2 ± 21.49	80.9 ± 18.58	78.51 ± 17.6	70.4 ± 20.26	78.12 ± 14.07	74.46 ± 27.9
2 (n = 88, 46.8%)	21.3 9± 6.5	3.75 ± 2.2	3.64 ± 2.7	83.9 ± 12.6	72.27 ± 24.49	68.38 ± 21.5	73.23 ± 21.5	71.59 ± 17.2	67.18 ± 21.8	75.12 ± 15.6	67.42 ± 27.6
≥3 (n = 53, 28.2%)	27.07 ± 5.45	4.11 ± 1.9	3.86 ± 2.32	83.1 ± 13.23	71.3 ± 23.12	72.3 ± 21.7	74.43 ± 20.5	70.37 ± 15.86	60.14 ± 23.9	72.71 ± 14.39	65.4 ± 23.53
P value	<.001[ab]	.32	.87	.34	.45	.57	.10	.035[a]	.05[a]	.19	.20
Nail diseases											
Diseases presenting with nail thickening (subungual hyperkera tosis, onychogryphosis, acquired/congenital malalignment of the great toenail) (n = 47, 25.0%)	20.27 ± 7.26	3.46 ± 2.1	3.25 ± 2.33	88.93 ± 10.57	73.36 ± 20.25	83.29 ± 18.5	85.00 ± 17.87	79.14 ± 17.42	77.12 ± 19.3	81.44 ± 15.13	77.30 ± 26.1
Ingrown toenail (n = 82, 43.6%)	22.93 ± 6.4	3.81 ± 2.09	3.53 ± 2.5	83.65 ± 11.7	69.02 ± 23.87	59.78 ± 17.26	71.09 ± 21.32	71.15 ± 18.09	64.32 ± 22.1	73.12 ± 15.12	68.29 ± 28.1
Pincer nail (n = 25, 13.3%)	24.49 ± 5.6	5.24 ± 2.33	5.32 ± 2.9	78.0 ± 14.43	67.4 ± 22.96	59.6 ± 13.95	61.20 ± 18.27	63.8 ± 11.2	58.5 ± 21.2	71.68 ± 13.7	60.0 ± 27.2
Other nail diseases (nail changes in dermatologic and systemic diseases, benign nail tumors) (n = 34, 18.1%)	25.38 ± 5.37	4.2 ± 1.73	3.64 ± 1.92	84.41 ± 13.8	78.38 ± 18.32	83.60 ± 22.24	83.52 ± 14.9	75.58 ± 15.06	71.59 ± 25.1	74.14 ± 13.17	63.72 ± 20.7
P value	.003[a]	.006[ac]	.006[a]	.004[a]	.018[a]	<.001[a]	<.001[a]	.002[a]	<.001[a]	.009[a]	.032[a]
Presence of onychomycosis											
Yes (n = 115, 61.2%)	24.53 ± 6.6	3.89 ± 2.7	3.99 ± 2.21	81.6 ± 12.9	67.82 ± 23.56	67.47 ± 20.36	69.69 ± 21.15	69.00 ± 16.67	64.13 ± 20.84	73.17 ± 15.05	64.34 ± 26.75
No (n = 73, 38.8%)	21.95 ± 6.4	3.45 ± 2.1	3.98 ± 2.02	88.69 ± 10.7	83.36 ± 17.58	73.83 ± 22.87	84.65 ± 16.25	79.24 ± 16.23	69.00 ± 24.21	78.38 ± 14.34	75.34 ± 25.47
P value	.035[a]	.21	.98	<.001[a]	<.001[a]	.055	<.001[a]	<.001[a]	.02[a]	.15	.005[a]
Involved fingernails											
Yes (n = 33, 17.6%)	26.79 ± 6.6	4.34 ± 1.56	4.03 ± 1.47	83.10 ± 14.41	72.64 ± 23.1	84.31 ± 19.4	84.65 ± 11.09	75.68 ± 14.49	57.32 ± 22.29	74.10 ± 11.92	60.92 ± 17.97
No (n = 155, 82.4%)	22.92 ± 4.58	3.92 ± 2.22	3.66 ± 2.64	84.59 ± 12.24	75.51 ± 17.8	67.32 ± 20.9	73.83 ± 21.59	72.48 ± 17.65	67.61 ± 21.97	75.39 ± 15.48	70.02 ± 27.86
P value	<.001[a]	.29	.22	.55	.52	<.001[a]	<.001[a]	.29	.02[a]	.61	.027[a]

Table 2. continued

Group	QOL	HADS		SF-36							
		Anxiety	Depression	PF	RP	BP	GH	VT	SF	MH	RE
Pain score											
0–5 (n = 98, 52.1%)	21.76 ± 6.63	3.68 ± 2.12	3.23 ± 2.35	81.32 ± 17.89	81.32 ± 17.8	85.10 ± 16.8	83.1 ± 16.3	75.30 ± 16.98	70.66 ± 21.39	78.87 ± 15.14	72.44 ± 25.3
5–10 (n = 90, 47.9%)	24.17 ± 6.34	4.32 ± 2.10	4.25 ± 2.55	64.11 ± 23.41	64.11 ± 23.41	53.44 ± 11.74	67.16 ± 20.98	70.44 ± 17.18	60.97 ± 22.23	71.18 ± 13.76	64.44 ± 27.73
P value	.012[a]	.04[a]	.005[a]	.003[a]	<.001[a]	<.001[a]	<.001[a]	.05[a]	.003[a]	<.001[a]	.041[a]

Note: Data are given as mean ± SD.

Abbreviations: BP, bodily pain; GH, general health; HADS, Hospital Anxiety and Depression Scale; MH, mental health; PF, physical functioning; QOL, Turkish quality of life; RE, role-emotional; RP, role-physical; SF, social functioning; SF-36, 36-Item Short-Form Health Survey; VT, vitality (energy/fatigue).

[a]Statistically significant.

[b]Pairwise comparisons. QOL: 1 versus ≥3, 2 versus ≥3. VT: 1 versus ≥3. SF: 1 versus ≥3.

[c]Pairwise comparisons. QOL: nail thickening disorder versus pincer nail ($P = .043$) and other ($P = .03$). HADS-A: nail thickening disorder versus pincer nail ($P = .007$), pincer nail versus ingrown toenail ($P = .026$). HADS-D: nail thickening versus pincer nail ($P = .008$), pincer nail versus other ($P = .03$), pincer nail versus ingrown toenail ($P = .014$). PF: nail thickening versus pincer nail ($P = .005$, pincer nail versus other ($P = .019$). RP: ingrown toenail versus nail thickening ($P = .04$). BP: nail thickening versus pincer nail ($P < .001$) and ingrown toenail ($P < .001$). GH: nail thickening versus pincer nail ($P < .001$) and ingrown toenail ($P = .001$), other versus pincer nail ($P < .001$) and ingrown toenail ($P = .009$). VT: pincer nail versus nail thickening ($P = .001$) and other ($P = .039$). SF: nail thickening versus pincer nail ($P = .007$), ingrown toenail ($P = .003$), and other ($P = .003$). RE: nail thickening versus pincer nail ($P = .042$).

Discussion

The results of the present study indicate that nail disorders are associated with decreased quality of life in affected individuals. Moreover, age, duration of disease, type of nail disorder, fingernail involvement, BMI, comorbid conditions, and pain score had significant effects on quality of life scale scores. Thus, clinicians dealing with nail disorders should pay attention to the mentioned clinical factors to provide better health care for their patients.

The effect of nail disorders on quality of life has been investigated in various studies.[1,7,8] A questionnaire-based study including 1,063 patients with nail disorders reported significantly decreased quality of life and increased frustration in most of the participants. However, no significant difference was found for quality of life between patients with fingernail and toenail involvement.[1] Another questionnaire-based survey performed on 3,904 patients revealed that onychomycosis reduced quality of life, especially in severe cases and female participants.[9] These results were mostly consistent with those of the present study. The present study found that patients with female sex, older age, multiple nail involvement, longer duration of disease, onycomycosis, and higher pain scores had worse scores on quality of life scales. In addition, significantly worse QOL, RE, and SF scores were observed in patients with fingernail involvement in the present study.

On the other hand, GH and BP scores were significantly lower in patients with toenail involvement. In our opinion, these findings may indicate that patients with fingernail involvement have more social and emotional stress, negatively affecting their daily life. Furthermore, toenail involvement seems to be associated with more pain perception. Thus, an individualized approach should be provided for patients with mentioned clinical characteristics by a multidisciplinary team. In addition, referring complicated cases to tertiary referral centers with a high level of experience may improve the quality of life for the patients. There are recent publications in the literature indicating the importance of appropriate treatment protocols for toenail disorders.[10-12] Foot health depends on adequate management of toenail diseases. For this reason, patients with lower quality of life scores may benefit from an individualized approach provided by an expert in podiatric medicine.

Three main quality of life scales were used in the present study: QOL, HADS, and SF-36. By this means, quality of life could be evaluated in all

aspects. The Turkish version of the QOL has been used for dermatologic diseases such as psoriasis, acne vulgaris, and hypertrophic scar in the past decade.[13-15] However, the number of studies involving nail disorders is limited, and they mostly focus on specific diseases.[16,17] These studies evaluated the effect of treatment modalities on the quality of life of the patients.[16,17] On the other hand, the present study evaluated the impact of demographic features and clinical characteristics on the QOL scores of patients with various nail disorders. Moreover, the application of correlation analyses provided a better perspective for the physicians. The HADS is a practical tool to assess the emotional response of the patients against various dermatologic diseases.[18,19] However, studies related to use of the HADS in nail disorders are still limited.[20] Significantly worse scores on most of the scales were observed in patients with ingrown toenail and pincer nail. The mentioned diseases are painful and chronic in nature. Probably due to these clinical features, they had significant effects on quality of life scale scores. Although mean HADS scores were different among the various study groups, all of the scores were lower than the defined cutoff values in the literature.[4] Thus, special care should be given for patients with these disorders, and a multidisciplinary approach should be provided to the toenail for achieving better clinical outcomes. To our knowledge, this is the most compherensive study in the literature evaluating the anxiety and depression levels of patients with various nail disorders by using the HADS. In addition, the impact of several clinical factors was correlated with the HADS. The SF-36 is a useful scale for the assesment of functional impairement, emotional status, disease-related pain, and quality of life in patients. This scale has been performed for patients with different dermatologic diseases, such as psoriasis, acne, and nail disorders.[8,21,22] Yet, more data are necessary regarding the utility of the SF-36 in patients with nail disorders. For this reason, studies with numerous parameters are valuable to obtain more

Table 3. Statistically Significant Correlations Between Age, Number of Affected Nails, Duration of Disease, Chronic Diseases/Medications, Presence of Onychomycosis, and BMI and the Quality of Life Scale Scores

Parameter		*r*	*P* Value
Age	Chronic diseases/ medications	0.41	<.001
	Duration of disease	0.023	.001
	Onycomycosis	0.215	.022
	BMI	0.39	<.001
	QOL	0.29	<.001
	PF	–0.55	<.001
	RP	–0.49	<.001
	MH	–0.32	<.001
	SF	–0.33	<.001
	VT	–0.55	<.001
	GH	–0.52	<.001
	RE	–0.40	<.001
No. of affected nails	Onychomycosis	0.166	.023
	Chronic diseases/ medications	0.19	.009
	QOL	0.40	<.001
	HAD-A	0.155	.047
	PF	–0.582	<.001
	RP	–0.351	<.001
	SF	–0.348	<.001
	VT	–0.689	<.001
	GH	–0.612	<.001
	RE	–0.221	<.001
Duration of disease	Chronic diseases/ medications	0.17	.027
	QOL	0.294	<.001
	HADS-A	0.477	<.001
	HADS-D	0.428	<.001
	PF	–0.160	<.001
	MH	–0.303	<.001
	SF	–0.233	.001
	VT	–0.204	.005
	GH	–0.170	.02
	RE	–0.231	.001
Chronic diseases/ medications	QOL	0.152	.048
	PF	–0.296	<.001
	RP	–0.203	.008
	SF	–0.187	.015
	VT	–0.294	<.001
	GH	–0.335	<.001
	RE	–0.253	.001
	Onycomycosis	0.201	.009
Onycomycosis	BMI	0.309	<.001
	PF	–0.291	<.001
	MH	–0.20	.006
	RE	–0.23	.001
	VT	–0.29	<.001
	GH	–0.35	<.001
	RP	–0.28	<.001
Body mass index	RP	–0.213	.003
	PF	–0.274	<.001
	GH	–0.217	<.001
	VT	–0.298	<.001
	SF	–0.150	.04
	RE	–0.214	.003
	BP	–0.157	.03

Abbreviations: BP, bodily pain; GH, general health; HADS, Hospital Anxiety and Depression Scale; MH, mental health; PF, physical functioning; QOL, Turkish Quality of Life; RE, role-emotional; RP, role-physical; SF, social functioning; VT, vitality (energy/fatigue).

precise results. In light of the previous literature and the findings from the present study, a novel clinical approach focusing on the clinical characteristics and the nature of specific nail disorders may lead to satisfactory outcomes for patients. Also, note that the attitudes and perceptions of patients about their diseases should be the center of attention for physicians. In our opinion, clinicians should deal with complications accompanying the nail disorders rather than just focusing on the nail disease itself. Furthermore, especially resistant cases that necessitate longer duration of therapy should be supported by their physicians in all aspects to improve quality of life scale scores.

The main strengths of the present study were its unique design, high number of study parameters, and application of three well-known quality of life scales. On the other hand, a relatively low number of patients was the main limitation.

In conclusion, nail disorders seem to have prominent effects on patients' quality of life. Older age, female sex, longer duration of disease, onychomycosis, presence of comorbid diseases, and higher pain scores were associated with significantly worse quality of life scores. Management of nail disorders is challenging, and generally, a long time is necessary to achieve favorable outcomes. For this reason, both physicians and patients should be persistent during the treatment process. Moreover, emotional and social support should be provided to patients.

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