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A Determination of the Quality of Life of Patients with Vitiligo Using the Dermatological Life Quality Index

Vitiligolu Hastalarda Dermatolojik Yaşam Kalite İndeksi Uygulanarak Yaşam Kalitesinin Etkilenme Derecesinin Belirtilmesi

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Abstract

Aim: Vitiligo is a severe skin disease that significantly affects individuals' quality of life due to striking color changes in external appearance, and one that causes the majority of patients to feel stigmatized. This study was conducted to determine the effects of vitiligo on patients' psychological and social lives and to elucidate how they perceive the disease.

Methods: The research was conducted as an epidemiological study. The Dermatological Life Quality Index (DLQI) was applied to patients with vitiligo presenting to our clinic and to a control group.

Results: Fifty patients with vitiligo and 50 healthy individuals were enrolled. The vitiligo group consisted of 26 (52%) women and 24 (48%) men, and the healthy control group of 24 (48%) women and 26 (52%) men. The patients' mean age was 37.2±13.1 years, and that of the healthy controls 34.7±9.2 years. No significant age or sex differences were observed between the patient and control groups ($p<0.05$). The mean duration of the disease was 83.9±72.9 months. The most common vitiligo subtype was focal vitiligo, at 52%. The vitiligo and control groups' mean DLQI scores were 5.5±5.0 and 1.4±1.3, respectively, the difference being statistically significant ($p<0.05$)

Conclusion: The findings of this study show that the quality of life of the patients with vitiligo was significantly impaired compared to the control group.

Keywords: Vitiligo, quality of life, psychology

Öz

Amaç: Vitiligo, dış görünümde göze çarpan renk değişiklikleri nedeniyle kişinin yaşam kalitesini önemli ölçüde etkileyen ve çoğu hastanın kendisini damgalanmış hissetmesine yol açan ciddi bir cilt hastalığıdır. Bu çalışmada vitiligonun hastaların psikolojik ve sosyal yaşantılarına etkilerinin saptanması ve hastaların hastalığı nasıl algıladıklarının anlaşılması amaçlanmaktadır.

Gereç ve Yöntem: Çalışmamız epidemiyolojik bir çalışma olarak tasarlanmıştır. Polikiliniğimize başvuran vitiligolu hastalara ve kontrol gruplarına dermatolojik yaşam kalitesi indeksi uygulandı.

Bulgular: Çalışmamıza 50 vitiligo hastası ve 50 sağlıklı kontrol grubu dahil edildi. Vitiligo hastalarının 26'sı (%52) kadın, 24'ü (%48) erkek'di. Sağlıklı kontrol grubunun 24'ü (%48) kadın, 26'sı (%52) erkek'di. Hastalarımızın yaş ortalamaları ve standart sapmaları 37,2±13,1, sağlıklı kontrol grubunun yaş ortalamaları ve standart sapmaları 34,7±9,2'di. Yaş ve cinsiyet açısından hasta ve kontrol grupları arasında istatistiksel olarak uyum vardı ($p<0{,}05$). Ortalama hastalık süresi ve standart sapması 83,9±72,9 ay olarak tespit edildi. Vitiligo klinik tipi olarak en sık görülen alt tip %52 ile fokal vitililigo oldu. Vitiligo ve kontrol gruplarında ortalama DYKİ skoru ve standart sapmaları sırasıyla 5,5±5,0 ve 1.4±1,3 olarak tespit edildi. Hasta grubumuzla sağlıklı kontrol grubu arasında istatistiksel olarak anlamlı bir fark bulundu ($p<0{,}05$).

Sonuç: Çalışmamızın bulguları vitiligolu hastalarda yaşam kalitesinin kontrol grubuna göre önemli düzeyde bozulduğunu göstermiştir.

Anahtar Kelimeler: Vitiligo, yaşam kalitesi, psikoloji

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INTRODUCTION

Vitiligo is a disease, the aetiopathology of which is still not fully understood, which progresses with the destruction of the melanocytes in the skin and which is characterised by well-defined, milky-white, depigmented macules on the skin.[1] It represents the most common cause of leukoderma, the probable global prevalence ranging between 0.1% and 2%.[2] Vitiligo can emerge in all age groups, but is most frequently seen between the ages of 10 and 30.[3] Although the etiopathogenesis is still unclear, the focus is currently on the autoimmune, neural, and autocytoxic hypotheses. The fact that vitiligo is seen together with several autoimmune diseases strengthens the autoimmune hypothesis.[4] The lesions sometimes follow a dermatomal area. This suggests that the neurochemical mediator response causes breakdown in melanocytes.[5] Clinically, vitiligo can be localized or generalized, the generalized form being more prevalent. It is characterized by lesions ranging from a few to widespread macules. These are frequently symmetrical and involve the extensor surfaces.[1]

The deleterious effects of dermatological diseases on patients' social relations, psychological states, and daily activities underline the importance and use of quality of life indices.[6] These are particularly important in terms of achieving a better understanding of patients' problems, monitoring post-treatment developments, and identifying clinical developments. Methods for measuring impairment caused by cutaneous diseases are needed for various reasons. They can be employed for comparison with systemic diseases, assessing the efficacy of new treatments, for evaluating the effectiveness of dermatology clinic services, for routine clinical follow-up, and for comparing the importance of different skin diseases and relative effectiveness of treatment.[7] The Dermatological Life Quality Index (DLQI) used in this study was first developed by Finlay and Khan. DLQI is one of the important and widely used tests specific to dermatology. It is suitable for daily clinical use, simple, sensitive, objective, and capable of use for all skin diseases. The DLQI also allows patients to reveal their problems and feelings and raises' physician's awareness of these.[8]

This study was conducted to determine the effects of vitiligo on the psychological and social experiences of patients using the DLQI, employed in several dermatological diseases, to elucidate how the patients perceive the disease, and to achieve a better understanding of their problems.

MATERIAL AND METHOD

The research was conducted as an epidemiological study. Fifty patients with clinically diagnosed vitiligo presenting to our clinic between April and August 2009 and 50 healthy controls with similar sociodemographic characteristics to those of the vitiligo group were enrolled. Inclusion criteria for the healthy control group were the absence of presentation to any physician within the previous three weeks and that the patients should have experienced no dermatological or systemic disease during that period. The questionnaire was explained to all the participants, and those consenting to take part were enrolled. Informed consent forms were obtained. Patients' age, sex, duration of disease, previously employed treatments, and presence of family history were investigated and recorded. The DLQI was applied to all participants to evaluate their quality of life. The form consisted of 10 questions with four possible responses, including symptoms and feelings, daily activities, spare time use, school/work life, personal relationships, and treatment was applied. The responses were the same for each question, with four possible options, the participants being asked to select only one. These were scored as follows: None/Never: 0, Slight: 1, High: 2, Very High: 3. Total DLQI scores (minimum 0, maximum 30) were calculated by adding the scores for each question. Total scores of 0–1 were interpreted as life being unaffected, 2–5 as being mildly affected, 6–10 as being moderately affected, 11–20 as being highly affected, and 21-30 as being extremely affected.

The study adhered to the tenets of the Declaration of Helsinki. Informed consent was obtained from all participants. Approved by the local ethics committee (13.03.2009/79-2)

Statistical Analysis

Data were analyzed with SPSS 14.0 program. Numerical data were expressed using mean, standard deviation and minimum-maximum values, and categorical data using frequencies and percentages. The chi–square test was applied in the analysis of categorical variables. Normality of distribution of continuous variables was assessed with the Kolmogorov–Smirnov test. Continuous variables in two independent groups were evaluated using Student's t–test when normally distributed and with the Mann–Whitney U test in case of non-normal distribution. One–way ANOVA was used if three or more groups were normally distributed, and Kruskal–Wallis test was used if distribution was not normal. The correlation of two continuous variables was shown with a scatter plot. Pearson correlation analysis was applied to determine the relationship between the duration of vitiligo and the DLQI. Statistical significance level was taken as $p<0.05$.

RESULTS

Fifty patients with vitiligo and 50 healthy individuals were enrolled in the study. Fifty-two percent (n=26) of the vitiligo group were women and 48% (n=24) were men, while 48% (n=24) of the control group were women and 52% (n=24) were men. Mean ages were 37.2±13.1 years in the vitiligo group and 34.7±9.2 in the control group. The two groups' mean ages were compatible. Age and gender distributions in the two groups are shown in **Table 1**.

Table 1. Age and gender distributions in the patient and control groups

	Vitiligo Patients	Control groups
Number	50	50
Gender (Female/Male)	26/24	24/26
Mean age (plus SD)	37.2±13.1	34.7±9.2
Age range	19–65	21–60

SD: Standard Deviation

The mean duration of the disease was 83.9±72.9 months, and a family history was present in 20% (n=10) of the 50 patients. The acrofacial type was present in 4% (n=2) of the patients, focal type vitiligo in 52% (n=26), generalized type in 36% (n=18), segmental type in 4% (n=2), and universal type in 4% (n=2). Thirty percent (n=15) of the 50 patients scored 0–1 on the DLQI (quality of life was unaffected), 26% (n=13) scored 2–5 (quality of life mildly affected), 26% (n=13) scored 6–10 (quality of life moderately affected), and 18% (n=9) scored 11–20 (quality of life highly affected).

The mean DLQI scores among the 50 patients with vitiligo and the 50 controls were 5.5±5.0 and 1.4±1.3, respectively, the difference being statistically significant (p<0.05) (**Figure 1**).

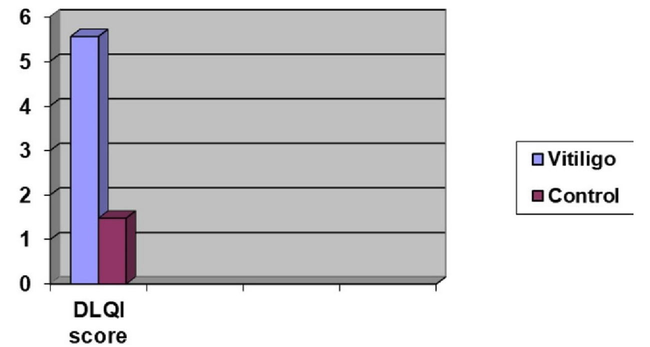

Figure 1. Mean DLQI scores of vitiligo and control groups

The mean DLQI score of the patients with focal type vitiligo was 4.3±4.0, compared to 7.2 ±6.3 in the generalized vitiligo group, the difference being statistically insignificant (p< 0.05).

A statistically significant association was determined between the duration of the disease of the vitiligo patients in this study and their DLQI scores (p<0.05) (**Figure 2**).

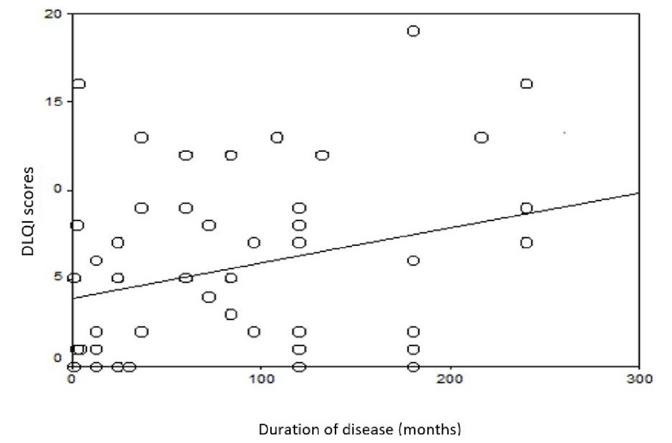

Figure 2. The relationship between duration of the disease and the DLQI scores

The DLQI subgroup scores of the patients in the study were 1.9±1.7 for symptoms and feelings (questions 1 and 2), 1.4±1.6 for daily activities (questions 3 and 4), 1±1.4 for spare time (questions 5 and 6), 0.8±1.1 for personal relationships (questions 8 and 9), 0.3±0.9 for school/work life (question 7), 0.2±0.6 for treatment (question 10). Significant differences were determined between the vitiligo patient and control groups in terms of all the DLQI subgroup scores. The highest score in both groups was in the symptoms and feelings subgroups, represented by questions 1 and 2. The two groups' mean DLQI subgroup scores and p values are shown in **Table 2**.

Table 2. The mean DLQI subgroup scores and p values in the vitiligo and control groups

	Vitiligo		Control		P
	Mean	SD	Mean	SD	
Feelings and symptoms (questions 1 and 2) Q1	1.9	1.7	0.9	0.8	P=0.01
Daily activities (question 3 and 4) Q2	1.4	1.6	0.3	0.6	P<0.05
Spare time (questions 5 and 6) Q3	1.0	1.4	0.2	0.4	P<0.05
Personal relationships (questions 8 and 9) Q4	0.8	1.1	0.1	0.2	P<0.05
School/work life (questions 7) Q5	0.3	0.9	0.0	0.0	P>0.05
Treatment (questions 10) Q6	0.2	0.6	0.0	0.0	P>0.05

SD: Standard Deviation

DISCUSSION

Vitiligo is typically characterized by clinically well-differentiated milky white depigmented cutaneous macules that progresses with generally asymptomatic selective melanocyte breakdown in the skin. It proceeds with remissions and flare-ups in correlation with triggering factors.[9]

The skin is the largest organ in the body, and one that plays a major role in sexual and social communication. Skin diseases can affect the patient's personality, social life, daily functions, and psychological state. They can lead to lack of confidence, shame, and embarrassment, and even to psychiatric diseases such as anxiety and depression. Patients can develop feelings such as shame and a sense of being different and lacking quality. Methods for measuring the impairment caused by skin diseases are needed for various reasons. For example, they can be used to enable comparisons with systemic diseases, to evaluate the efficacy of new treatments, to monitor the effectiveness of dermatology clinics, for routine clinical follow-up, and to assess the importance of different diseases of the skin and assess the relative efficacy of treatments. Vitiligo is one of the dermatological diseases capable of severely affecting patients' quality of life and leading to social isolation.[10]

This study therefore applied the DLQI to identify any impairment in the quality of life of patients with vitiligo.

Vitiligo is equally distributed between the sexes.[11] However, some studies have observed a greater prevalence in women.[12] This may be due to women more frequently seeking medical attention due to esthetic concerns. The female/male ratio in the present study was 1.083, a figure compatible with the existing literature.

A previous study reported a prevalence of vitiligo among first-degree relatives of 15.9%.[13] A family history was determined in 20 of the patients in the present study. Generalized vitiligo is the most widespread reported form in the literature.[14] In contrast to previous studies, however, focal vitiligo was observed in 52% of our patients, and generalized vitiligo in 36%.

The DLQI is also important because it allows patients to reveal their problems and feelings and also raise physicians' awareness of this condition. It is frequently employed in several dermatological diseases.

A previous study investigating the effects of treatment on DLQI scores in vitiligo patients determined a mean initial score of 10.6, decreasing to 7 after treatment.[15] This also shows that the DLQI can be effectively employed to assess the efficacy of treatment. The mean DLQI in that study was higher than our own figure (5.5±5.0). However, and similarly to the current research, a significant association was determined in that study between the duration of the disease and DLQI scores. We think that this may be attributable to the individual being less able to perform daily activities and being exposed to greater mental trauma the longer the disease persists.

Similarly, a previous study of 70 patients with vitiligo reported a mean DLQI score of 0–24.[16] In the present study, the mean DLQI score was 0-20. Daily activity subgroup scores were compared by gender in that study, the analysis revealing that women's daily activities were more impacted than those of men. In the present study, however, there was no statistically significant association between DLQI scores and gender.

Another study reported a mean DLQI score of 4.8±4.8 in patients with vitiligo.[17] This was lower than our own mean DLQI value, showing that our patients were more affected. In contrast to the present research, that study also found an association between the clinical disease type and the DLQI.

Studies have shown that more than half of patients with vitiligo are unable to easily establish relationships with the opposite sex, that the majority experience distress and embarrassment when they meet strangers or embark on an emotional and sexual relationship with a new partner, that many feel themselves to be the victims of rude or disparaging words, and that 15% of patients reported that vitiligo directly affected their sexual lives.[18]

When our patients were asked about the extent to which their skin had affected their sex lives in the previous week, one of the items on the DLQI, 8% (n=4) reported experiencing difficulties with their sex lives. We think that, although this figure is low, further multi-center studies with greater participation are now needed on this subject.

A previous study comparing the quality of life of psoriasis and vitiligo groups concluded that the quality of life of the vitiligo patients was less affected than that of the psoriasis group.[19] Although no comparison was performed with any other disease in the present study, we think that such comparisons will be useful in terms of evaluating the mental impacts of vitiligo.

While a statistically significant association was observed between sex and the DLQI in that study, no significant gender difference was observed in the DLQI scores in the present research. We think that since vitiligo is a dermatological disease capable of causing esthetic concerns by affecting the individual's appearance, this may explain the higher DLQI scores among women, who may attach greater importance to external appearance. Although no significant association between sex and the DLQI was observed in this study, we think that further studies with greater participation are needed on the subject.

Another study, of 109 patients with vitiligo, reported a mean DLQI score of 14.7, markedly higher than that in the current research.[20]

A study from Germany determined higher DLQI scores in vitiligo patients with large body surface areas affected by the disease.[21] However, no significant association was determined in the present study between the size of the area affected and DLQI scores.

CONCLUSION

The quality of life of the vitiligo group in this study was severely impaired compared with the healthy control group, and quality of life also decreased in line with the duration of the disease. Physicians should not regard vitiligo solely as an esthetic problem, and must display the requisite care in diagnosis and treatment by remembering that it also impairs the individual's quality of life. We think that recognizing and combating the psychosocial symptoms of vitiligo is important in terms of improving patients' quality of life of patients and achieving a better response to treatment.

ETHICAL DECLARATIONS

Ethics Committee Approval: The study was carried out with the permission of Atatürk University Faculty of Medicine Local Ethics Committee (Date: 13.03.2009, Decision No: 2-79).

Informed Consent: All patients signed the free and informed consent form.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

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Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

Note: This study was derived from a thesis by the corresponding author and appeared as an oral presentation at the 1st International Eurasian Dermato-venerology and Cosmetology Congress held on 08-12 June 2022.

REFERENCES

1. Bergqvist C, Ezzedine K. Vitiligo: A focus on pathogenesis and its therapeutic implications. J Dermatol. 2021;48(3):252-70.
2. Krüger C, Schallreuter KU. A review of the worldwide prevalence of vitiligo in children/adolescents and adults. Int J Dermatol 2012;51(10):1206-12.
3. Ezzedine K, Diallo A, Léauté-Labrèze C, et al. Pre- vs. post-pubertal onset of vitiligo: multivariate analysis indicates atopic diathesis association in pre-pubertal onset vitiligo. Br J Dermatol. 2012;167(3):490-5.
4. Frisoli ML, Essien K, Harris JE. Vitiligo: Mechanisms of Pathogenesis and Treatment. Annu Rev Immunol. 2020; 38:621-48.
5. Sandoval-Cruz M, García-Carrasco M, Sánchez-Porras R, et al. Immunopathogenesis of vitiligo. Autoimmun Rev 2011;10(12):762-5.
6. Halioua B, Beumont MG, Lunel F. Quality of life in dermatology. Int J Dermatol. 2000;39(11):801-6.
7. Acıöz E, Gökdemir G, Köşlü A, Dermatolojide yaşam kalitesi. Turk Arch Dermatol Venereol 2003; 37:16–23.
8. Finlay AY, Khan GK. Dermatology life quality index (DLQI)- a simple practical measure for routine clinical use. Clin Exp Dermatol. 1994; 19: 210–6.
9. Picardo M, Dell'Anna ML, Ezzedine K, et al. Vitiligo. Nat Rev Dis Primers. 2015; 1:15011
10. Osinubi O, Grainge MJ, Hong L, et al. The prevalence of psychological comorbidity in people with vitiligo: a systematic review and meta-analysis. Br J Dermatol. 2018;178(4):863-78.
11. Alikhan A, Felsten LM, Daly M, Petronic-Rosic V. Vitiligo: a comprehensive overview Part I. Introduction, epidemiology, quality of life, diagnosis, differential diagnosis, associations, histopathology, etiology, and work-up. J Am Acad Dermatol. 2011;65(3):473-91.
12. Krüger C, Schallreuter KU. A review of the worldwide prevalence of vitiligo in children/adolescents and adults. Int J Dermatol. 2012;51(10):1206-12.
13. Dogra S, Parsad D, Handa S, Kanwar AJ. Late onset vitiligo: a study of 182 patients. Int J Dermatol. 2005;44(3):193-6.
14. Handa S, Dogra S. Epidemiology of childhood vitiligo: a study of 625 patients from north India. Pediatr Dermatol. 2003;20(3):207-10.
15. Parsad D, Pandhi R, Dogra S, Kanwar AJ, Kumar B. Dermatology Life Quality Index score in vitiligo and its impact on the treatment outcome. Br J Dermatol. 2003;148(2):373-4.
16. Aghaei S, Sodaifi M, Jafari P, Mazharinia N, Finlay AY. DLQI scores in vitiligo: reliability and validity of the Persian version. BMC Dermatol. 2004;4:8.
17. Kent G, al-Abadie M. Factors affecting responses on Dermatology Life Quality Index items among vitiligo sufferers. Clin Exp Dermatol. 1996;21(5):330-3.
18. Rzepecki AK, McLellan BN, Elbuluk N. Beyond Traditional Treatment: The Importance of Psychosocial Therapy in Vitiligo. J Drugs Dermatol. 2018;17(6):688-91.
19. Ongenae K, Van Geel N, De Schepper S, Naeyaert JM. Effect of vitiligo on self-reported health-related quality of life. Br J Dermatol. 2005;152(6):1165-72.
20. Al Robaee AA. Assessment of quality of life in Saudi patients with vitiligo in a medical school in Qassim province, Saudi Arabia. Saudi Med J. 2007;28(9):1414-7.
21. Radtke MA, Schäfer I, Gajur A, Langenbruch A, Augustin M. Willingness-to-pay and quality of life in patients with vitiligo. Br J Dermatol. 2009;161(1):134-9.