

A Cross-Sectional Study of Quality of Life, Treatment Adherence, and Health-Seeking Behavior in Turkish Patients with Rheumatoid Arthritis: Gender and Education as Key Predictors

Betülay Kilic¹, Emine Akdoğan², Fatma Ilknur Cinar¹, Melih Pamukcu², Filiz Bozdeveci³

¹Department of Internal Medicine Nursing, Gülhane Faculty of Nursing, University of Health Sciences, Ankara, Turkey; ²Department of Rheumatology, Etlik City Hospital, University of Health Sciences, Ankara, Turkey; ³Health Care Services Management, Etlik City Hospital, University of Health Sciences, Ankara, Turkey

Correspondence: Betülay Kilic, Department of Internal Medicine Nursing, Gülhane Faculty of Nursing, University of Health Sciences, Emrah Avenue, Etlik, Keçiören, Ankara, 06010, Turkey, Email betulay.kilic@sbu.edu.tr

Purpose: This study aimed to examine the quality of life, treatment adherence, and health-seeking behavior among patients with rheumatoid arthritis.

Materials and Methods: This cross-sectional study was conducted with 161 patients diagnosed with rheumatoid arthritis between May 2024 and May 2025. Data were collected using the “Personal Information Form”, “Rheumatoid Arthritis Quality of Life Questionnaire (RAQoL)”, “Compliance Questionnaire on Rheumatology (CQR-T)”, and the “Health-Seeking Behavior Scale”.

Results: The mean age of the participants was 57.94 ± 13.46 years, and 72% were female. The mean duration of symptoms was 12.95 ± 10.06 years, and the mean disease activity score was 6.09 ± 2.59 . The analyses showed that lower treatment adherence, greater symptom severity, and female gender had negative effects on quality of life, while higher disease activity had a positive effect ($\beta = -0.205$; $\beta = -0.284$; $\beta = -0.155$; $\beta = 0.303$, respectively). In addition, a decrease in quality of life was found to negatively affect treatment adherence, whereas professional health-seeking behavior improved adherence ($\beta = -0.164$; $\beta = 0.519$). Educational level was also found to have a positive effect on health-seeking behavior ($\beta = 0.304$).

Conclusion: This study highlights the complex interplay of psychosocial, behavioral, and clinical factors influencing quality of life in patients with rheumatoid arthritis. Specifically, we found that male gender was a significant predictor of better quality of life, while higher education levels were associated with stronger health-seeking behavior. These findings underscore the importance of strengthening treatment adherence, promoting proactive health-seeking behavior, and considering sociodemographic differences such as gender and education in patient care. Moreover, this study is among the first to examine health-seeking behavior alongside quality of life and treatment adherence in RA, providing a unique contribution to the literature. Integrating these factors into management strategies can better support clinicians in improving both health outcomes and quality of life for their patients. This study highlights the complex interplay of psychosocial, behavioral, and clinical factors influencing quality of life in patients with rheumatoid arthritis. The findings underscore the importance of strengthening treatment adherence, promoting proactive health-seeking behavior, and considering sociodemographic differences such as gender and education in patient care. Moreover, this study is among the first to examine health-seeking behavior alongside quality of life and treatment adherence in RA, providing a unique contribution to the literature. Integrating these factors into management strategies can better support clinicians in improving both health outcomes and quality of life for their patients.

Keywords: rheumatoid arthritis, quality of life, adherence, health-seeking behavior

Introduction

Rheumatoid arthritis (RA) is a chronic, systemic, and progressive autoimmune connective tissue disease. It primarily affects peripheral joints, leading to pain, swelling, limited mobility, and loss of function, which may eventually result in disability.¹

The global prevalence of RA is reported to be approximately 0.21%. Although its incidence is relatively low in the general population, RA represents a significant public health concern due to its associated health burden.^{2,3} While the disease mainly targets joints, it can also involve internal organs such as the lungs, heart, and eyes, potentially leading to severe systemic complications and even premature death. RA-related joint stiffness, chronic fatigue, and reduced physical functioning cause considerable limitations in individuals' daily activities. In the absence of early diagnosis and appropriate treatment, the disease can result in progressive organ damage and permanent disability.⁴ Uncontrolled active RA may also lead to a marked decline in quality of life and contribute to cardiovascular diseases and other comorbidities.⁵

Current clinical guidelines recommend initiating disease-modifying antirheumatic drugs (DMARDs) immediately following diagnosis.⁶ The primary goal of treatment is to suppress inflammation, prevent joint damage, and restore normal joint function. To achieve this, early, aggressive, and remission-targeted treatment strategies, commonly known as "treat-to-target" approaches, are advocated. Treatment options now include conventional, targeted synthetic, and biological DMARDs. Additionally, patients may be prescribed corticosteroids and nonsteroidal anti-inflammatory drugs (NSAIDs) to relieve symptoms such as pain and swelling. Through treat-to-target approaches, RA related symptoms can be alleviated, joint destruction can be slowed, and long-term clinical outcomes may be improved.⁷ However, attaining these outcomes requires adequate treatment adherence. When adherence is suboptimal, the positive effects of targeted therapies on quality of life may remain limited.⁸ Studies show that adherence levels among RA patients vary widely, with reported rates ranging between 14% and 79%.⁹⁻¹² Low treatment adherence is associated with increased disease activity, radiographic progression, and poor clinical outcomes.¹² In patients with poor adherence, disease progression, loss of function, and increased disability may occur, often necessitating additional therapies or surgical interventions. This situation also contributes to a significant economic burden on healthcare systems.¹³ Thus, treatment adherence is a critical component in the effective management of chronic diseases such as RA, highlighting the need for the development of targeted intervention strategies.

The chronic pain, joint deformities, loss of function, disability, intensive treatment processes, limitations in daily activities, reduced work capacity, social isolation, and dependency caused by RA significantly affect patients' quality of life.^{14,15} In this context, the concept of health-seeking behavior becomes increasingly relevant. Health-seeking behavior refers to the efforts individuals make to obtain information, seek support, and access treatment in response to health concerns.¹⁶ This behavior may manifest as consulting a healthcare provider, self-medicating, following advice from close contacts, or searching for information through online resources. Among individuals with chronic illnesses, such behaviors play a critical role in disease management.¹⁷ Studies in the field of chronic diseases have shown that patients with higher health literacy and proactive health-seeking behavior demonstrate better treatment adherence and improved quality of life.¹⁸⁻²⁰ These findings indicate that health-seeking behavior holds clinical value not only in terms of acquiring information but also in enhancing self-management skills, enabling early detection of flares, and preventing disability.^{21,22} Theoretically, health-seeking behavior can be explained through frameworks such as the Health Belief Model and the Andersen Healthcare Utilization Model. The Health Belief Model posits that individuals' health behaviors are shaped by their perceptions of susceptibility to illness, disease severity, and the perceived benefits and barriers to treatment. In contrast, the Andersen model emphasizes that both individual factors (such as age, gender, and education) and environmental factors determine healthcare utilization.¹⁸ From these perspectives, it becomes evident that the health-seeking behavior of patients with RA is influenced not only by biomedical aspects but also by psychosocial and sociodemographic factors. Indeed, studies have shown that women with RA report higher disease activity and fatigue compared to men, while men respond more favorably to TNF inhibitor therapy.^{23,24} Variables such as education level, social support, and pain perception have also been identified as key determinants in this process.^{25,26} Therefore, the inclusion of gender, education, and psychosocial factors as independent variables in this study is both theoretically and clinically justified.

RA patients experience an increased need for information due to physical, psychosocial, and functional limitations, which in turn triggers health-seeking behavior. The literature indicates that individuals with chronic illnesses often turn to online resources, connect with others who have similar experiences, and through these channels gain greater control over their condition and enhance their self management skills.²⁷ The type and quality of health-seeking behavior exhibited by individuals can directly influence their health status, disease diagnosis and treatment, and recovery processes. Therefore, identifying these behavioral tendencies is of great importance at both individual and societal levels. While existing literature includes studies assessing quality of life and treatment adherence in RA patients, there is a lack of research

examining health-seeking behavior within this population. Our study aims to fill this unique gap and represents the first to simultaneously evaluate quality of life, treatment adherence, and health-seeking behavior in RA patients. Furthermore, understanding these three dimensions can inform the design of targeted, gender and socially sensitive interventions in rheumatology clinics. This study specifically aims to assess quality of life, treatment adherence, and health-seeking behavior among individuals diagnosed with RA.

Materials and Methods

Study Design and Participants

This study was conducted as a cross-sectional design between May 2024 and May 2025 among patients diagnosed with rheumatoid arthritis who presented to rheumatology outpatient clinics. The hospital registry indicated a total of 1000 patients diagnosed with RA. During the period in which the sample was collected, 277 patients meeting the inclusion criteria visited the hospital. The sample size was calculated using the formula established by Salant and Dillman (1994):

$$n = N t^2 p q / d^2 (N - 1) + t^2 p q$$

N: Total population size

n: Number of individuals to be sampled

p: Frequency of occurrence of the studied event (probability of occurrence)

q: Frequency of non-occurrence of the studied event (probability of non-occurrence)

t: Theoretical value from the t-table corresponding to a given significance level

d: Accepted margin of error for the occurrence frequency of the event

The sample size was calculated using Salant and Dillman's formula for this non-homogeneous population with a 95% confidence interval and $\pm 5\%$ sampling error, and the required sample size was $n = 277 (1.96)^2 (0.05) (0.05) / (0.05)^2 (277-1) + (1.96)^2 (0.05) (0.05) = 161$ participants.²⁸ Inclusion criteria were: (a) having a confirmed diagnosis of RA, (b) being aged 18 years or older, and (c) voluntarily agreeing to participate in the study. Exclusion criteria included: (a) having a major psychiatric disorder, and (b) being pregnant. The sample consisted of all patients meeting the inclusion criteria, who were consecutively enrolled in the study. Data were collected through face-to-face interviews conducted by a trained rheumatology nurse, who was a member of the research team. No modifications were made to the questionnaire items beyond standard translation procedures. The average completion time for each questionnaire was approximately 20–25 minutes.

Data Collection Tools

Data were collected using the following instruments:

Personal Information Form

This form gathered sociodemographic data (eg, age, gender, education level, marital status, employment status, income level, and socioeconomic status) and clinical characteristics (eg, date of diagnosis, smoking status, exercise habits, treatment methods, symptoms, comorbidities, information received about the disease, and patient's global health assessment).

Rheumatoid Arthritis Quality of Life Questionnaire (RAQoL)

Originally developed by De Jong, Van Der Heijde, McKenna, and Whalley to assess the quality of life in individuals with RA, the RAQoL was adapted into Turkish by Kutlay et al. It includes 30 dichotomous items ("yes" = 1, "no" = 0), with scores ranging from 0 to 30, where higher scores indicate worse quality of life.^{29,30} The original Cronbach's alpha values were 0.95 and 0.96. In the present study, Cronbach's alpha was found to be 0.71.

Compliance Questionnaire on Rheumatology (CQR-T)

Developed by De Klerk et al and validated in Turkish by Cinar et al, this 19-item questionnaire evaluates treatment adherence using a 4-point Likert scale. Items are scored from 1 (strongly disagree) to 4 (strongly agree), with six items reverse-coded. The total score is calculated by subtracting 19 from the sum of all items and dividing the result by 0.57.

Final scores range from 0 (non-adherence) to 100 (perfect adherence).^{31,32} In the current study, Cronbach's alpha was calculated as 0.94.

Health Seeking Behavior Scale

Developed by Kırac (2019), this 12-item scale comprises three subdimensions: online health-seeking, professional health-seeking, and traditional health-seeking behavior.³³ Items are scored on a 5-point Likert scale, with higher scores indicating greater health-seeking behavior. The original Cronbach's alpha was 0.75, while in this study it was found to be 0.69. The Health Seeking Behavior Scale used in this study yielded a Cronbach's alpha of 0.69, slightly below the conventional threshold. Possible reasons for this include the limited number of items in the scale, the impact of cultural differences on health-seeking perceptions, and the heterogeneous views of individuals on these topics. Since Cronbach's alpha coefficient is sensitive to the number of items, lower values can be expected, particularly in short scales.³⁴ Nevertheless, the scale was retained in the analyses to preserve its structural integrity and to ensure comparability with existing research.

Data Analysis

Data were analyzed using IBM SPSS Statistics version 24.0 (IBM Corp., Armonk, NY, USA). Continuous variables were expressed as mean $\pm$ standard deviation (SD), and categorical variables as frequencies and percentages, with normality assessed using skewness and kurtosis values. Independent samples *t*-tests and one-way ANOVA were used for group comparisons, while the backward elimination method was employed in multivariable models. Correlation coefficients were interpreted as low (0.10–0.29), moderate (0.30–0.49), or strong (≥ 0.50). Multiple linear regression analyses were conducted to identify factors associated with quality of life, health-seeking behavior, and treatment adherence, with key assumptions checked, including linearity, absence of multicollinearity (VIF < 10), normal distribution of residuals (Q-Q plot, Shapiro–Wilk test), homoscedasticity (Breusch–Pagan test), and independence of error terms (Durbin–Watson test); outliers were assessed using Cook's Distance. Statistical significance was set at $p < 0.05$. Additionally, a post-hoc power analysis for the main regression model assessing quality of life, with a sample size of 161, 4 predictors, and an R^2 of 0.186, indicated a medium effect size (Cohen's $f^2 = 0.228$) and a post-hoc power of approximately 0.99, confirming that the study was sufficiently powered to detect the observed associations.

Ethical Approval

This study was approved by the Ankara Etlik City Hospital Scientific Research Evaluation and Ethics Committee (Session date: 08.05.2024; Protocol No: AEŞH-EK-2024-354). Participants were informed about the purpose of the study, as well as privacy and confidentiality issues, and all participants provided written informed consent in accordance with the Declaration of Helsinki.

Results

The sociodemographic characteristics of the participants were evaluated in this study. The mean age of the participants was 57.94 ± 13.46 years, and 72% were female. The mean scores for quality of life, treatment adherence, and health-seeking behavior were found to be 14.41 ± 9.05 , 75.14 ± 12.36 , and 2.80 ± 0.63 , respectively. When sociodemographic characteristics were compared with the main outcome variables, a statistically significant difference was observed between gender and quality of life scores ($p = 0.009$), indicating that male participants had a better quality of life compared to females. A significant association was also found between educational level and health-seeking behavior ($p < 0.001$). Participants with a high school, university, or postgraduate education demonstrated higher health-seeking behavior scores compared to those with only primary education. No statistically significant relationship was found between treatment adherence and any sociodemographic characteristics ($p > 0.05$). The comparisons of participants' quality of life, treatment adherence, and health-seeking behavior scores according to sociodemographic characteristics are presented in Table 1.

Table 2 presents the comparison of participants' quality of life, treatment adherence, and health-seeking behavior scores based on their medical characteristics. The mean time since diagnosis was 11.27 ± 9.28 years, and the mean global assessment

Table 1 Comparison of Participants' Quality of Life, Treatment Adherence, and Health-Seeking Behavior Scores by Sociodemographic Characteristics (n=161)

Characteristics	n (%)	Quality of Life Mean±SD	Treatment Adherence Mean±SD	Health-Seeking Behavior Mean±SD
Age (mean±SD)	57.94±13.46	14.41±9.05	75.14±12.36	2.80±0.63
Gender				
Female	116 (72.0)	15.57±8.53	75.40±12.34	2.80±0.65
Male	45 (28.0)	11.42±9.74	74.46±12.52	2.79±0.58
t/p		2.662/ 0.009	0.434/0.665	0.052/0.9
Marital status				
Married	151 (93.8)	14.27±9.04	75.0±12.48	2.80±0.63
Single	7 (6.2)	19.28±9.42	78.44±10.84	2.78±0.60
t/p		-1.431/0.154	-0.715/0.476	0.095/0.925
Educational level				
Primary school	110 (68.3)	15.18±9.02	74.57±13.23	2.70±0.61 ^a
Secondary school	39 (24.2)	12.74±8.52	76.74±9.97	3.09±0.63 ^b
University or above	12 (7.5)	12.83±10.79	75.14±11.41	3.30±0.40 ^b
F/p		1.245/0.291	0.439/0.291	8.304/ <0.001 ^{a<b}
Employment status				
Yes	29 (18.1)	11.55±9.30	77.13±10.94	2.83±0.70
No	132 (82.0)	15.04±8.91	74.70±12.64	2.79±0.61
t/p		-1.876/0.057	0.956/0.340	0.292/0.771
Economical status				
Income < Expenses	56 (34.8)	15.60±9.29	73.18±13.64	2.87±0.55
Income = Expenses	94 (58.4)	13.21±8.87	76.65±11.46	2.76±0.66
Income > Expenses	11 (6.8)	18.63±8.01	72.24±12.07	2.72±0.69
F/p		2.558/0.081	1.721/0.182	0.658 /0.520
Place of residence				
Village	16 (9.9)	16.68±9.40	69.40±16.79	2.76±0.52
Town	26 (16.1)	11.61±9.37	78.94±10.28	2.83±0.62
City	119 (74.0)	14.72±8.87	75.08±11.88	2.79±0.64
F/p		1.834/0.163	3.030/0.051	0.081 /0.922

Notes: t: Independent samples t test, F: One Way ANOVA, ^{a<b}Post Hoc Analiz, Bold values indicate statistically significant differences at p < 0.05.
Abbreviation: SD, standard deviation.

Table 2 Comparison of Participants' Quality of Life, Treatment Adherence, and Health-Seeking Behavior Scores by Medical Characteristics (n=161)

Characteristics	n (%)	Quality of Life Mean±SD	Treatment Adherence Mean±SD	Health-Seeking Behavior Mean±SD
Duration of diagnosis (years)		11.27±9.28		
Duration of symptoms (years)		12.95±10.06		
Global assessment (0–10)		6.09±2.59		

(Continued)

Table 2 (Continued).

Characteristics	n (%)	Quality of Life Mean±SD	Treatment Adherence Mean±SD	Health-Seeking Behavior Mean±SD
Family history of rheumatologic disease				
Yes	69 (42.9)	15.57±9.11	76.73±11.26	2.84±0.64
No	92 (57.1)	13.54±8.96	73.95±13.05	2.77±0.62
t/p		1.416/0.159	1.419/0.158	0.666/0.506
Smoking status				
Yes	33 (20.5)	13.03±10.58	73.68±10.83	2.82±0.67
No	117 (72.7)	14.99±8.64	75.37±12.88	2.79±0.64
Quit	11 (6.8)	12.45±8.45	77.03±11.46	2.78±0.37
F/p		0.879/0.417	0.377/0.687	0.022/0.978
Exercise habit				
Yes	22 (13.7)	12.95±9.69	75.59±10.17	2.89±0.51
No	78 (48.4)	13.47±8.98	73.57±13.27	2.72±0.59
Ocassion	61 (37.9)	16.14±8.78	76.99±11.76	2.87±0.70
Test/p		1.842/0.162	1.333/0.267	1.264/0.285
Informed about the disease				
Yes	106 (65.8)	13.50±8.98	76.08±12.21	2.80±0.62
No	55 (34.2)	16.16±9.02	73.33±12.55	2.80±0.64
Test/p		-1.776/0.078	1.343/0.181	0.033 /0.974
Comorbidity				
Yes	100 (62.1)	15.61±8.85	75.43±12.31	2.84±0.65
No	61 (37.9)	12.45±9.11	74.66±12.52	2.73±0.59
Test/p		2.166/ 0.032	0.386/0.700	1.123/0.263
Medication side effects				
Yes	25 (15.5)	15.84±8.43	76.56±12.48	2.84±0.80
No	136 (84.5)	14.15±9.17	74.88±12.36	2.79±0.59
Test/p		0.855/0.394	0.622/0.535	0.324/0.746
Symptoms present				
Yes	143 (88.8)	15.46±8.64	74.86±12.62	2.77±0.62
No	18 (11.2)	6.11±8.05	77.38±10.03	2.98±0.70
t/p		4.354/ <0.001	-0.816/0.416	-1.281/0.202
Symptoms present*				
Fatigue	118 (73.3)			
Joint pain	114 (70.8)			
Swelling	90 (55.9)			
Morning stiffness	87 (54.0)			
Insomnia	77 (47.8)			
Deformities	74 (46.0)			

(Continued)

Table 2 (Continued).

Characteristics	n (%)	Quality of Life Mean±SD	Treatment Adherence Mean±SD	Health-Seeking Behavior Mean±SD
Medications Used*				
sDMARDs	129 (80.1)			
Glucocorticoids	104 (64.6)			
NSAID	19 (11.8)			
bDMARDs	11 (6.8)			
Comorbid Conditions*				
Hypertension	57 (35.4)			
Diabetes mellitus	29 (18.0)			
Thyroid disorders	24 (14.9)			
Heart disease	16 (9.9)			
COPD	14 (8.7)			
Effects Side Medication*				
Nausea	9 (5.6)			
Abdominal pain	8 (5.0)			
Fatigue	8 (5.0)			
Edema	5 (3.1)			
Fever	3 (1.9)			
Dizziness	3 (1.9)			
Vision problems	3 (1.9)			
Rash	3 (1.9)			

Notes: t: *Multiple responses allowed (n exceeds N). Bold values indicate statistically significant differences at $p < 0.05$.

Abbreviations: SD, standard deviation; sDMARDs, Synthetic disease-modifying antirheumatic drugs; bDMARDs, Biologic disease-modifying antirheumatic drugs; NSAID, Non-steroidal anti-inflammatory drug; COPD, Chronic Obstructive Pulmonary Disease.

score was 6.09 ± 2.59 . When clinical characteristics were examined in relation to outcome variables, statistically significant differences were found in quality of life scores according to comorbidity status ($p = 0.032$), presence of symptoms ($p < 0.001$), use of subcutaneous methotrexate (soHMEARI) ($p = 0.028$), and steroid use ($p = 0.048$). Specifically, participants with comorbidities and those symptoms present had lower quality of life scores, whereas those using subcutaneous methotrexate and steroids had better quality of life. No statistically significant differences were found between medical characteristics and treatment adherence or health-seeking behavior scores ($p > 0.05$). These comparisons are detailed in [Table 2](#).

[Table 3](#) presents the correlation values among participants' quality of life, treatment adherence, and health-seeking behavior scores. A negative and weak but statistically significant correlation was found between treatment adherence and quality of life ($r = -0.215$, $p = 0.006$). A strong positive correlation was observed between the professional health-seeking behavior subscale and treatment adherence ($r = 0.546$, $p < 0.001$), while a weak negative correlation was found between the traditional health-seeking subscale and treatment adherence ($r = -0.181$, $p = 0.022$). In terms of health-seeking behavior, strong positive correlations were found between the professional and overall health-seeking scores ($r = 0.836$, $p < 0.001$), and a moderate positive correlation was observed between the traditional and overall health-seeking behavior scores ($r = 0.410$, $p < 0.001$). Global assessment was moderately and positively correlated with quality of life ($r = 0.317$, $p < 0.001$), indicating that higher disease activity was associated with lower quality of life. Additionally, a weak negative correlation was found between online health-seeking behavior and global assessment ($r = -0.192$, $p = 0.015$). All correlation results are provided in [Table 3](#).

[Table 4](#) shows the regression analysis results for identifying risk factors associated with quality of life, treatment adherence, and health-seeking behavior. The regression model for quality of life was found to be statistically significant ($F = 7.064$, $p < 0.001$). Quality of life was negatively predicted by treatment adherence ($\beta = -0.205$), gender ($\beta = -0.155$), and the presence of symptoms ($\beta = -0.284$), whereas higher disease activity ($\beta = 0.303$) was

Table 3 Correlations Between Quality of Life, Treatment Adherence, Health-Seeking Behavior, and Global Assessment (n = 161)

	Quality of Life	Treatment Adherence	Health-Seeking Behavior	Online Health-Seeking	Professional Health-Seeking	Traditional Health-Seeking	Global Assessment
Quality of Life	I						
Treatment Adherence	r: -0.215 p: 0.006	I					
Health-Seeking Behavior	r: 0.035 p: 0.656	r: 0.050 p: 0.526	I				
Online Health-Seeking	r: 0.002 p: 0.980	r: 0.066 p: 0.404	r: 0.836 p< 0.001	I			
Professional Health-Seeking	r: -0.085 p: 0.398	r: 0.546 p< 0.001	r: -0.020 p: 0.803	r: 0.034 p: 0.670	I		
Traditional Health-Seeking	r: 0.067 p: 0.389	r: -0.181 p: 0.022	r: 0.410 p< 0.001	r: 0.025 p: 0.749	r: 0.089 p:0.161	I	
Global Assessment	r: 0.317 p< 0.001	r: -0.068 p: 0.392	r: -0.130 p: 0.100	r: 0.192 p: 0.015	r:-0.037 p:0.641	r:0.056 p:0.481	I

Notes: Pearson correlation analysis was used. Bold values indicate statistically significant differences at $p < 0.05$.

Table 4 Multivariate Analysis of Risk Factors Associated with Quality of Life, Treatment Adherence, and Health-Seeking Behavior

Covariate	β	SE	t	p	VIF	95% Confidence Interval	
						Lower	Upper
Constant		6.057	5.862	< 0.001		23.539	47.470
Treatment Adherence	-0.205	0.053	-2.862	0.005	1.010	-0.254	-0.047
Symptoms present	-0.284	2.084	-3.902	< 0.001	1.074	-12.249	-4.015
Gender	-0.155	1.461	-2.131	0.035	1.038	-6.001	-0.227
Global Assessment	0.303	0.256	4.125	< 0.001	1.055	0.525	1.525
F=7.064, $R^2=0.186$, $p<0.001$							
Constant		5.008	10.063	< 0.001		40.507	60.291
Quality of Life	-0.164	0.089	-2.518	0.013	1.010	-0.401	-0.048
Professional Health-Seeking	0.519	1.384	7.888	< 0.001	1.024	8.181	13.646
F=26.585, $R^2=0.337$, $p<0.001$							
Constant		0.199	11.784	< 0.001		1.950	2.735
Educational Level	0.304	0.061	3.994	< 0.001	1.000	0.123	0.362
F=6.701, $R^2=0.114$, $p<0.001$							

Notes: Multiple linear regression analysis was conducted. Dependent variables: Quality of Life, Treatment Adherence, Health-Seeking Behavior. Bold values indicate statistically significant differences at $p < 0.05$.

positively associated with quality of life. The regression model for treatment adherence was also significant ($F = 26.585$, $p < 0.001$). Treatment adherence was negatively predicted by quality of life ($\beta = -0.164$) and positively associated with professional health-seeking behavior ($\beta = 0.519$). Finally, the regression model for health-seeking behavior was statistically significant ($F = 6.701$, $p < 0.001$). Educational level was found to be a significant positive predictor of health-seeking behavior ($\beta = 0.304$).

Discussion

The aim of this study was to identify key psychosocial and behavioral variables that are essential for understanding and improving patients' quality of life, treatment adherence, and health-seeking behavior. According to the regression analysis, treatment adherence, disease related symptoms, and gender had a negative effect on quality of life, whereas high disease activity showed a positive effect. In addition, quality of life was found to negatively influence treatment adherence, while professional health-seeking behavior had a positive impact on treatment adherence. Furthermore, higher education levels were positively associated with improved health-seeking behavior.

In this study, it was found that RA related symptoms, poor treatment adherence, and high disease activity negatively affected patients' quality of life. The literature consistently emphasizes that disease related symptoms are among the primary factors contributing to decreased quality of life in individuals with RA.³⁵ In our study, the majority of patients reported experiencing fatigue, joint pain and swelling, morning stiffness, joint deformities, and sleep disturbances. These symptoms are considered important clinical indicators of high disease activity. The severity of symptoms and high patient reported disease activity scores negatively impact not only physical functioning but also general health perception and psychosocial well-being.³⁶ In fact, several studies have shown that high levels of disease activity are significantly associated with poorer quality of life.^{37,38}

In chronic conditions such as rheumatoid arthritis, treatment adherence is critical for controlling disease activity, alleviating symptoms, and preventing complications. Recent research has highlighted that adherence plays a key role in the effective management of RA and in improving patients' quality of life.³⁹ For example, Li et al reported that non-adherent patients had higher disease activity and worse functional outcomes.¹³ Similarly, Ruiz-Vilchez et al found that patients who adhered to their treatment had lower disease activity, better clinical outcomes, and improved quality of life.⁴⁰ These findings suggest that regular adherence to pharmacological treatment not only facilitates symptom control but is also a key factor in enhancing quality of life. Therefore, clinical practice should prioritize interventions and patient education strategies aimed at improving adherence.

Gender differences have been identified as an important factor influencing quality of life in patients with rheumatoid arthritis (RA). The literature shows that female patients report higher pain perception as well as increased levels of depression and anxiety compared to males, which negatively affects their quality of life.^{23,41} Data from the DANBIO registry indicate that male patients receiving TNF inhibitor therapy achieve higher rates of treatment response and remission than female patients, suggesting that gender may influence treatment outcomes.²⁵ Furthermore, Nilsson et al reported that men experience better improvements in disease activity and functional outcomes across all age groups, whereas women particularly those of advanced age exhibit greater joint damage and less functional improvement.²⁶ Potential delays in diagnosis and initiation of treatment in women may also adversely impact quality of life.⁴² These findings suggest that lower psychosocial stress in men and gender based physiological differences may contribute to relatively higher quality of life. Therefore, considering both physiological and psychosocial gender differences and adopting personalized care approaches is crucial in the management of RA.

This study also revealed that RA patients with comorbidities had significantly lower quality of life than those without. Comorbidity exerts a considerable impact on the course of chronic diseases and poses a substantial burden on physical functioning and general health perception in RA patients. Previous studies have reported a high prevalence of comorbidities in RA, which complicates clinical management and reduces quality of life.^{43,44} These findings are consistent with our study. In RA, comorbid conditions can increase symptom severity, reduce functional capacity, and make treatment adherence more challenging. Furthermore, the effects of comorbidities are not limited to the physical domain but also extend to psychological and social functioning. Psychiatric comorbidities such as depression and anxiety are known to increase pain perception and negatively influence patients' subjective health evaluations.⁴⁵ These conditions may also

undermine patients' trust and commitment to treatment. Although comorbidities were found to be significant in bivariate analyses, they did not remain significant in multivariable regression models; therefore, their impact should not be interpreted as an independent effect on quality of life. Therefore, the follow-up and treatment of RA patients should adopt a holistic approach that includes not only rheumatologic symptoms but also coexisting comorbidities. Early diagnosis and multidisciplinary management of comorbidities in clinical settings are critical for preserving quality of life and improving treatment outcomes.

Our study also showed that an increase in educational level was significantly associated with higher levels of professional health-seeking behavior. Education plays a critical role in improving individuals' access to health information, as well as their ability to evaluate and apply it. The literature reports that individuals with higher education levels are more likely to recognize symptoms earlier, seek information from professional health sources, and even serve as information providers within their social networks.^{46,47} Furthermore, this study found that increased professional health-seeking behavior positively influenced treatment adherence, while a preference for traditional practices was associated with lower adherence. This suggests that the type of health information individuals pursue directly affects treatment outcomes.

In addition, higher disease activity was found to be associated with increased online health information-seeking behavior. This observation aligns with the findings of Pak et al, who reported that patients with acromegaly turned to digital resources and patient communities in response to heightened informational needs following diagnosis.²⁷ Similarly, Magnol et al found that patients with RA were more likely to use online platforms to seek information about disease progression, pain management, diet, and exercise. However, the literature also warns that online health information-seeking behavior carries the risk of exposure to unreliable sources, which can lead to misinformation and reduced adherence.⁴⁸ Therefore, enhancing digital health literacy is especially important for individuals who frequently seek health information online.

Overall, the findings of this study indicate that health-seeking behavior in RA patients have a significant impact on treatment adherence, information access, and quality of life. In particular, there is a need for guidance and educational interventions to improve health literacy among individuals with lower education levels. In clinical practice, identifying patients' health-seeking behavior patterns and developing tailored communication strategies accordingly may improve adherence and optimize disease management. These findings can also guide clinical applications such as patient education, adherence enhancing interventions, and nurse led programs. A holistic evaluation of RA patients one that includes their behavioral tendencies and psychosocial context has the potential to improve not only healthcare utilization but also long-term clinical outcomes.

Limitations of the Study

This study has several limitations. As a cross-sectional study, it can only capture associations between variables rather than causal relationships. Data collection was conducted at a single center, which may limit the generalizability of the findings. Self-reported data introduce the potential for response and recall bias, and psychosocial and socioeconomic factors may not have been fully captured. Furthermore, the limited number of studies on health-seeking behavior in RA constrained broad comparisons and in depth discussion. The validity and reliability of the instruments used to assess complex constructs such as treatment adherence and health-seeking behavior may also have influenced the results. Future research should employ longitudinal designs and investigate health-seeking behavior in greater depth to better understand changes over time.

Conclusion

This study demonstrated that symptom burden, high disease activity, and poor treatment adherence negatively impact the quality of life in patients with rheumatoid arthritis. Moreover, male patients were found to have better quality of life compared to female patients, and higher education levels were associated with more active health-seeking behavior. These findings indicate that attention should be given not only to physical symptoms but also to psychosocial and educational factors. In light of these results, pharmacological treatment alone is not sufficient for the effective management of RA. Patient-specific characteristics, gender-sensitive approaches, and adherence supportive strategies should also be considered. Holistic approaches including regular monitoring of disease activity, patient education, and psychosocial support play a central role in improving quality of life. Additionally, interventions aimed at improving health literacy

should be promoted to foster informed and proactive health-seeking behavior among patients, thereby enhancing treatment adherence.

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