

Health-Related Quality of Life (HRQoL) and Its Associated PCR112 Factors among Chinese Gout Patients: Baseline Findings from a Survey Study

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OBJECTIVES

To evaluate the HRQoL of gout and examine the associations of socio-demographic, gout-specific, and comorbid characteristics and medication use with the HRQoL measured by both generic and gout-specific instruments among gout patients in China.

METHODS

A representative sample of Chinese gout patients were recruited through a professional online panel company using stratified quota sampling based on age, sex, registered residence, and education level.

Socio-demographic characteristics, gout-specific characteristics, comorbidities, gout medications use, and self-reported EQ-5D-5L and GIS responses were collected.

Statistical analysis:

- Socio-demographic, gout-specific, and comorbid characteristics, medication use, and HRQoL scores of respondents were described using descriptive statistics.
- One-way analysis of variance (ANOVA) was used to test the differences in the scores of the GIS and EQ-5D-5L across subgroups.
- A multiple linear regression (MLR) model was used to explore the relationships between the self-reported scores with other variables:

$$Y = \beta + \beta_1X_1 + \beta_2X_2 + \dots + \beta_nX_n + \varepsilon$$

where Y is the predictor or target variable and X_1, X_2, \dots, X_n are the independent variables. β is the y-intercept and $\beta_1, \beta_2, \dots, \beta_n$ and ε are the coefficients and error term respectively.

RESULTS

Descriptive statistics

- A total of 1,000 patients were included in the study (see Table 1).

Table 1. Characteristics of respondents (N=1,000)

Characteristics	Total sample N (%)	Tophi presence N (%)		P-value ^a
		Yes (N1 = 178)	No (N2 = 822)	
Age (mean [SD])	54.47 [13.4]	53.6 [13.68]	54.7 [13.39]	0.319
Sex				0.710
Male	697 (69.7%)	122 (68.5%)	575 (70.0%)	
Female	303 (30.3%)	56 (31.5%)	247 (30.0%)	
Registered residence				<0.01
Urban	720 (72.0%)	113 (64.5%)	607 (73.8%)	
Rural	280 (28.0%)	65 (36.5%)	215 (26.2%)	
Disease duration (years) ^b	3.69 [3.10]	4.63 [0.23]	3.49 [0.11]	<0.001
Gout attacks in the last three months				<0.001
Never	263 (26.3%)	23 (12.9%)	240 (29.2%)	
1	536 (53.6%)	77 (43.3%)	459 (55.8%)	
2	141 (14.1%)	57 (32.0%)	84 (10.2%)	
≥3	60 (6%)	21 (11.8%)	39 (4.7%)	
Number of involved joints				<0.001
0	822 (82.2%)	0	822 (100%)	
1	95 (9.5%)	95 (53.4%)	0	
2	51 (5.1%)	51 (28.6%)	0	
≥3	32 (3.2%)	32 (18.0%)	0	
Severity of pain at the last attack	6.50 [2.02]	7.21 [0.12]	6.34 [0.07]	<0.001
Hospitalization in the past year				<0.001
Yes	221 (22.1%)	66 (37.1%)	155 (18.9%)	
No	779 (77.9%)	112 (62.9%)	667 (81.1%)	
Outpatient in the past three months				<0.001
Yes	534 (53.4%)	121 (68.0%)	413 (50.2%)	
No	446 (44.6%)	57 (32.0%)	409 (49.8%)	
Comorbidities				
Diabetes mellitus	119 (11.9%)	19 (10.7%)	100 (12.2%)	0.577
Hypertension	404 (40.4%)	85 (47.7%)	319 (38.8%)	<0.05
Dyslipidemia	208 (20.8%)	53 (29.8%)	155 (18.9%)	<0.001
Cardiac disease	46 (4.6%)	9 (5.1%)	37 (4.5%)	0.749
Stroke	94 (9.4%)	11 (6.2%)	83 (10.1%)	0.104
Mental problems	37 (3.7%)	9 (5.1%)	28 (3.4%)	0.290
Medications for lowering sUA level				
Colchicine	189 (18.9%)	35 (19.7%)	154 (18.7%)	0.774
NSAIDs	242 (24.2%)	41 (23.0%)	201 (24.4%)	0.689
Glucocorticoids	229 (22.9%)	52 (29.2%)	177 (21.5%)	<0.05
Allopurinol	293 (29.3%)	67 (37.6%)	226 (27.5%)	<0.01
Febuxostat	319 (31.9%)	78 (43.8%)	241 (29.3%)	<0.001
Benzbromarone	211 (21.1%)	45 (25.3%)	166 (20.2%)	0.132
Citrate preparations	169 (16.9%)	43 (24.2%)	126 (15.3%)	<0.01
Sodium Bicarbonate	157 (15.7%)	43 (24.2%)	114 (13.9%)	<0.001
EQ-5D-5L (mean [SD])	0.77 [0.19]	0.68 [0.20]	0.79 [0.18]	<0.001
GIS score (mean [SD]) ^c	53.76 [13.62]	59.37 [10.89]	52.55 [13.85]	<0.001

^a T-tests or chi-squared tests were used.

^b Disease duration was calculated up to June 2024.

Correlations between HRQoL and gout-specific, co-morbid, and socio-demographic characteristics and medication use variables

- For the GIS scores, poor HRQoL was independently associated with living in rural areas, participating in the URBMI, having cardiac diseases, more attacks in the last three months, higher pain severity, significantly decreased exercise intensity, and more hospitalizations in the past year (see Table 2).

Table 2. Multiple linear regression for associating factors of GIS scores (N = 1000)

Characteristics	Coefficient (std.)	95%CI	P value
Registered residence			
Urban	Reference		
Rural	2.66 (1.02)	0.65 to 4.66	0.009
Insurance coverage			
UEBMI	Reference		
URBMI	2.01 (1.03)	-0.02 to 4.04	0.052
None	-8.31 (3.42)	-15.03 to -1.59	0.015
Cardiac disease			
No	Reference		
Yes	3.83 (1.75)	0.40 to 7.26	0.029
Gout attacks in the last three months			
Never	Reference		
1	5.24 (0.92)	3.43 to 7.04	< 0.001
2	6.64 (1.29)	4.11 to 9.17	< 0.001
≥3	8.34 (1.73)	4.94 to 11.75	< 0.001
Severity of pain at the last attack	2.52 (0.18)	2.17 to 2.88	< 0.001
Current exercise intensity			
Decreased significantly	Reference		
Decreased slightly	-3.78 (0.83)	-5.42 to -2.15	< 0.001
No significant difference	-7.31 (1.10)	-9.46 to -5.15	< 0.001
Increased slightly	-1.12 (1.33)	-3.73 to 1.48	0.398
Increased significantly	-3.75 (4.01)	-11.62 to 4.12	0.350
Hospitalization in the past year			
0	Reference		
1	3.06 (0.93)	1.27 to 4.89	0.001
≥2	2.95 (1.60)	-0.18 to 6.09	0.065

- When it came to the EQ-5D-5L, poor HRQoL was independently associated with having cardiac diseases, more attacks in the last three months, higher pain severity, significantly decreased exercise intensity, more hospitalizations in the past year, and without the use of colchicine or glucocorticoids (see Table 3).

Table 3. Multiple linear regression for associating factors of EQ-5D-5L utility (N = 1000)

Characteristics	Coefficient (std.)	95%CI	P value
Cardiac disease			
No	Reference		
Yes	-0.05 (0.03)	-0.11 to -0.00	0.050
Gout attacks in the last three months			
Never	Reference		
1	-0.08 (0.01)	-0.11 to -0.05	< 0.001
2	-0.13 (0.02)	-0.17 to -0.10	< 0.001
≥3	-0.12 (0.03)	-0.17 to -0.06	< 0.001
Severity of pain at the last attack	-0.02 (0.00)	-0.02 to -0.01	< 0.001
Current exercise intensity			
Decreased significantly	Reference		
Decreased slightly	0.06 (0.01)	0.04 to 0.09	< 0.001
No significant difference	0.06 (0.02)	0.03 to 0.10	< 0.001
Increased slightly	0.09 (0.02)	0.04 to 0.13	< 0.001
Increased significantly	0.10 (0.06)	-0.02 to 0.23	0.096
Hospitalization in the past year			
0	Reference		
1	-0.03 (0.01)	-0.06 to -0.00	0.037
≥2	-0.03 (0.02)	-0.08 to 0.02	0.184
Colchicine			
No	Reference		
Yes	0.04 (0.01)	0.01 to 0.06	0.012
Glucocorticoids			
No	Reference		
Yes	0.03 (0.01)	0.00 to 0.05	0.046

CONCLUSIONS

- The HRQoL of gout patients was influenced by a combination of socio-demographic, gout-specific, and comorbid characteristics and medication use.
- Both generic and gout-specific measures have effectively demonstrated the impact of gout-specific characteristics on HRQoL

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