

Predictors of health-related quality of life among older patients with skin diseases

Tahereh Mahdavi Nejad¹, Fatemeh Mohammadi², Fariba Abdollahi³, Ozkan Gorgulu⁴, Seyedeh Ameneh Motalebi^{2*}

¹ Student Research Committee, School of Nursing and Midwifery, Qazvin University of Medical Sciences, Qazvin, Iran.

² Social Determinants of Health Research Center, Research Institute for Prevention of Non-Communicable Diseases, Qazvin University of Medical Sciences, Qazvin, Iran.

³ Department of Medical Sciences, Qazvin Branch, Islamic Azad University, Qazvin, Iran.

⁴ Department of Biostatistics and Medical Informatics, Faculty of Medicine, Ahi Evran University, Turkey.

Abstract

Background Numerous health-related conditions arise with advancing age. Skin diseases highlight essential global public health priorities. So, this research examines whether or not socio-demographic and clinical factors predict quality of life among older patients with skin diseases.

Methods This cross-sectional and descriptive study was undertaken on 310 older patients with skin diseases referred to Razi Clinic in Rasht, Iran. The convenience sampling method was used to select older patients. A demographic characteristic checklist and Dermatology Life Quality Index (DLQI) were used to collect data. The predicted factors were detected by the multivariate regression model.

Results The mean age of the older patients was 64.51 ± 5.04 years old. Most participants were female (56.9%, $n=148$), married (83.5%, $n=217$), and lived with their spouse or spouse and children (82.3%, $n=214$). Results showed that quality of life was significantly associated with economic situation ($\beta=0.22$, $p<0.001$), type of skin disease ($\beta=-0.33$, $p<0.001$), history of psychological ($\beta=0.20$, $p=0.009$) or physical problems ($\beta=0.12$, $p=0.042$), and duration of skin disease ($\beta=0.24$, $p<0.001$).

Conclusion The majority of older patients experienced moderate to large impacts of skin diseases on their quality of life. The results of the current study emphasized the impacts of the economic situation and clinical characteristics of older patients on their quality of life.

Key words

Quality of life; Skin disease; Psychological problem.

Introduction

Aging is a global phenomenon that will be one of the most important challenges to the health systems of developing countries in the near

future.¹ The growth of the older population is inevitable. The number of older people aged 60 is predicted to increase from 600 million to 2 billion during the 50 years from 2000 to 2050.² Most of this increase occurs in less developed countries. Aging population in Iran is considered a growing phenomenon. According to the 2016 census, 9.28% of the country's population will have reached more than 20% of the population by 2050.³ Aging is a natural process that is accompanied by gradual and continuous physical social, and psychological changes.⁴

Address for correspondence

Dr. Seyedeh Ameneh Motalebi
Social Determinants of Health Research Center,
Research Institute for Prevention of Non-Communicable Diseases, Qazvin University of Medical Sciences, Qazvin, Iran.
Ph: +98 9118554822
Email: ammotalebi@yahoo.com

Skin changes are among the most obvious signs of aging. Regenerative capacity, protective function, sensory perception, mechanical protection, temperature regulation, sweat creation, sebum and vitamin D production, and skin repair ability decrease with age.⁵ Older people are prone to infection, dryness, and itching. Skin aging is associated with formation of wrinkling, elastosis, laxity, and rough-textured.⁶ The most common skin disorders in older adults are eczematous dermatoses, pruritus, and bacterial, viral, or fungal infection. Older people are much more likely to experience disability due to a skin condition.⁷ Itching is the main clinical symptom of dermatologic patients, which can cause sleep deprivation and mental disorders. Physical disfiguring due to skin disorders results in psychological problems, social isolation, and social stigma.⁸ Although mortality rates are generally low, skin diseases have significant impacts on QoL.⁹

Skin disorders are an important cause of psychosocial conditions among the aging population.¹⁰ The evaluation of the impact of dermatoses on patients' QoL is important for clinical management.¹¹ Based on the World Health Organization definition QoL is an "individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns".¹² QoL is a multi-dimensional construct that contains physical, social, functional, and psychological domains.¹³ Skin disease has the potential to affect all these dimensions of QoL.¹⁴

Health-related QoL (HRQoL) is a key indicator of older people's health status that can be affected by different factors. For instance Cheraghi *et al.*⁴ found that education level, gender, and marital status had a significant relationship with QoL. Ejaz *et al.*¹⁵ showed that the QoL was significantly associated with the duration of the disease. Zahmatkeshan *et al.*¹⁶

also reported a statistically significant relationship with such factors as education level, employment status, economic and housing status, and the existence of chronic disease with QoL.

Skin disorders, as a category of chronic disease, have a long-term impact on HRQoL. Information about the frequency of skin disorders among older adults in different geographical regions will assist in planning appropriate preventive and curative policies. However, there is a scarcity of researchers on the QoL of older patients with skin disorders in developing countries.¹⁰ The present study undertaken to identify the predictors of HRQoL in a sample of Iranian older adults.

Methods

This cross-sectional descriptive study was conducted on 310 older people with skin diseases referred to Razi Clinic in Rasht, Iran. The patients were chosen by the convenience sampling approach. Inclusion criteria consisted of age of 60 years and older, tendency to take part in the study, and suffering from a chronic skin disease. Those with a history of psychological problems such as Alzheimer's, depression, and severe anxiety or those who suffer from severe hearing problems (that were not able to communicate verbally and answer questions were excluded from the study).

The sample size was estimated by the G*Power version 3.1.9.6. As a result of the power analysis, the total sample size was found to be 255 ($\alpha=0.05$, effect size=0.25, power $1-\beta=0.90$). By considering a 20% nonresponsive rate, a sample size of 310 was finalized for this study.

Data was gathered by a socio-demographic checklist (age, gender, marital status, level of education, job, living arrangement, economic status, living location, and type and duration of

skin disease) and Dermatology Life Quality Index (DLQI) questionnaire.

Impairment of HRQoL was determined by the DLQI, a commonly used dermatology-specific questionnaire including 10 questions to be answered with reference to the past week. The questions are answered on a four-point Likert scale from 0, meaning “no impact”, to 3, meaning “maximum impact”. The obtained scores of DLQI is ranged between 0 and 30, higher scores representing poorer HRQoL.^{17,18} HRQoL impairment was classified as: no impact (0–1); small impact (2–5); moderate impact (6–10); very large impact (11–20); and extremely large impact (21–30).¹⁹ The validity and reliability of this questionnaire was confirmed in a study by Aghaei *et al.*²⁰

The questionnaires were completed by the researcher through face-to-face interviews from 20th April to 20th Jun 2020. Sampling was continued until the sample size was reached.

Ethical consideration All participants were assured that the information would remain confidential. Informed consent was acquired from all older patients before collecting the data. This study was approved by the ethics committee of Qazvin University of Medical Sciences (IR.QUMS.REC.1398.355).

Statistical Analysis Statistical analysis was conducted by SPSS version 21.0 (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp., USA). Data was presented as mean (standard deviation) and number (percentage). Predictive factors of QoL were determined by a multivariate regression model when normality assumptions were met. The significance level was considered at $p < 0.05$.

Results

A total of 310 patients were studied. The mean age of participants was 64.62 ± 5.18 years old and

mean duration of skin disease was 11.01 ± 9.76 years. Socio-demographic characteristics of the older patients were presented in **Table 1**.

According to the results, the mean of HRQoL was 9.82 ± 5.13 . The results that the majority of older patients (74.8%, $n=232$) experienced moderate to large effects on their HRQoL (**Figure 1**).

Table 1 Descriptive statistics and analysis results.

Demographic Characteristics	Number (%)
Gender	
Female	176 (56.8)
Male	134 (43.2)
Marital Status	
Single	53 (17.1)
Married	257 (82.9)
Educational Status	
Illiterate	75 (24.2)
Elementary	89 (28.7)
Secondary	33 (10.6)
Diploma and higher	113 (36.5)
Economical status	
Low	124 (40.0)
Average	144 (46.5)
Good	42 (13.5)
Job	
Housewife	130 (41.9)
Retired	93 (30.0)
Employed	74 (23.9)
Unemployed	13 (4.2)
Living arrangement	
With spouse	77 (24.8)
With children	23 (7.4)
With spouse and children	177 (57.1)
Other	6 (1.9)
Alone	27 (8.7)
Location	
Village	93 (30.0)
Urban	217 (70.0)
Physical problems	
Yes	248 (80.0)
No	62 (20.0)
Psychological problems	
Yes	107 (34.5)
No	203 (65.5)
Type of Skin disease	
Pemphigus	113 (36.5)
Psoriasis	126 (40.6)
Eczema	59 (19.0)
Fungal infection	9 (2.9)
Other	3 (0.9)

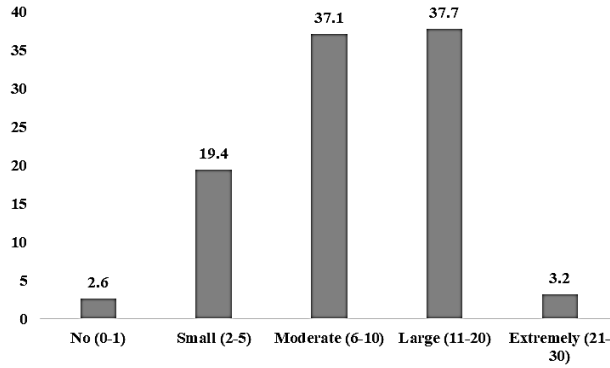


Figure 1 Proportion of overall effect of skin diseases on HRQoL among older patients referring to Razi Clinic in Rasht, Iran. (N=310).

The results showed that patients had lower HRQoL if they had low economic situation ($\beta=0.22$, $p<0.001$), a history of psychological problems ($\beta=0.20$, $p=0.009$) or physical ($\beta=0.12$,

$p=0.042$) problems. The results also showed that the HRQoL of patients with pemphigus was significantly higher than those with psoriasis ($\beta=-0.33$, $p<0.001$). Furthermore, those with longer duration of the skin disease ($\beta=0.24$, $p<0.001$) reported lower HRQoL (**Table 2**).

Discussion

The present study was designed to determine the correlated factors for HRQoL among older patients with skin diseases referring to Razi Clinic in Rasht, Iran. The majority of the patients reported moderate to large effects of their skin diseases on HRQoL. This result may be associated with the visibility of most skin disease symptoms and the impact on their daily life,²¹ and its related psychological stress.

Table 2 Predictors for HRQOL among older patients with skin diseases.

Variables		Crud β Coefficient (CI: 95%)	Adjusted β coefficient (CI: 95%)
Age		0.14(0.03, 0.25); $P=0.016$	0.06(-0.05, 0.17); $P=0.270$
Gender		0.10(8.64, 10.16); $P=0.095$	-
Marital status	Married	-0.02(-1.76, 1.29); $P=0.760$	-
Location	Urban	-0.03(-1.63, 0.88); $P=0.555$	-
Level of education	Illiterate	0.04(-0.14, 2.04); $P=0.578$	-
	Elementary	1	-
	Secondary	0.03(-1.64, 2.49); $P=0.686$	-
	Diploma and higher	-0.01(0.92, -1.51); $P=0.916$	-
Economic situation	Low	0.22(1.13, 3.56); $P<0.001$	0.14(0.31, 2.68); $P=0.014$
	Average	1	1
	Good	0.7(-0.64, 2.83); $P<0.001$	0.01(-1.63, 1.71); $P=0.0962$
Job	Housewife-unemployed	1	-
	Retired	-0.03(-1.64, 1.05); $P=0.669$	-
	Employed	0.10(-0.30, 2.59); $P=0.119$	-
Type of skin disease	Psoriasis	1	1
	Pemphigus	-0.33(-4.72, -2.21); $P<0.001$	-0.32(-4.64, -2.06); $P<0.001$
	Eczema	-0.12(-3.10, -0.05); $P=0.043$	-0.02(-1.91, 1.28); $P=0.700$
	Fungal infection	-0.90(-6.07, 0.61); $P=0.109$	-0.06(-5.27, 1.37); $P=0.249$
	Other	-0.90(-10.17, 1.15); $P=0.118$	-0.06(-8.57, 2.29); $P=0.255$
Living arrangement	With spouse and children	1	-
	With spouse	0.08(-0.41, 2.36); $P=0.166$	-
	With children	0.01 (-2.03, 2.46); $P=0.853$	-
	Alone	0.07(-0.79, 3.39); $P=0.222$	-
	Others	0.02(-3.64, 4.76); $P=0.794$	-
Psychological problem	Yes	0.20(0.99, 3.35); $P<0.001$	0.15(0.40, 2.83); $P=0.009$
Physical problem	Yes	0.12(0.07, 2.92); $P=0.041$	0.11(0.05, 2.77); $P=0.042$
Duration of disease		0.24(0.7, 0.18); $P<0.001$	0.15(0.02, 0.14); $P=0.009$

Note: β : Standard regression coefficient, t: Test statistics, SD: Standard Deviation, CI: Confidence Interval.

However, previous studies have shown different results. As AlOtaibi *et al.*²² reported that skin diseases had a small to no impact on the QoL of 69% of the patients. Abolfotouh *et al.*²³ found that the QoL of 69% of patients with skin diseases in central Saudi Arabia was good. Some studies also have reported a moderate to very large effect of psoriasis on patients' QoL.²⁴⁻²⁶ These discrepancies may be explained by differences in the severity of the diseases, cultural differences in the skin disease experiences, and the type of sample.

The results of the present study showed that the HRQoL of older patients with pemphigus was significantly higher than those with psoriasis. Shahbaz *et al.*²⁷ also found an extremely large impact on QOL among patients with psoriasis followed by hirsutism, melasma, vitiligo, acne, and eczema. Psoriasis patients experience severe stress related to negative self-image and disturbed interpersonal relationships or socialization; this is specifically relevant to those patients where lesions are placed on exposed parts of the body.²⁸ Furthermore, managing psoriasis in older adults can be a clinical challenge, due to multiple medical conditions, concomitant medication, and age-related physical problems that negatively impact their HRQoL.^{29,30} However, a significant reduction in the HRQoL has been observed in pemphigus patients.^{31,32} These discrepancies may be related to the severity of symptoms and the stage of diseases. As Tabolli *et al.*³³ reported that pemphigus patients with a more chronic disease have a better quality of life compared to the newly identified ones. Paradisi *et al.*³⁴ also found a significant association between the severity of pemphigus and decreased HRQoL.

The results also showed that those with a history of psychological or physical problems reported lower HRQoL. Likewise, Karpińska-Mirecka, Bartosińska³⁵ showed that patients with psoriasis

who had comorbidities reported worse HRQoL. The presence of comorbidities also had the greatest impact on all of the SF-36 subscales among patients with acne.²³ The existence of comorbid factors was observed to predict poor HRQoL among patients with psoriasis.³⁶ The correlation between skin diseases and psychological problems such as depression, anxiety, and the physical health of patients has been documented in the literature.^{9,37} Patients with skin disorders experience a high level of fear, anxiety, or depression due to disturbed body image, decreased social communication, and interactions.³⁸

The current study also found that a longer duration of the disease was correlated with severely impaired HRQoL scores. This finding is in agreement with those of the previous studies showing a connection between longer skin disease duration and poor HRQoL.^{15,39,40} In patients with skin conditions, worries about the symptoms of the disease, changes in self-image, and depression increase over time.^{41,42} However, studies on alopecia areata,⁴³ and vitiligo⁴⁴ have not supported this statistically significant correlation.

In the current study, patients with low economic status were more likely to report lower HRQoL. Likewise, Nguyen *et al.*⁴⁵ found that higher income was associated with greater HRQoL in patients with skin disorders. Higher economic status increases the accessibility to health care, treatment, medications, and medical services.⁴⁶ Additionally, financial worries are important factors that affect patients' mental health. Financial problems, poverty, and social deprivation are the main barriers from comfort and security for older people.⁴⁷

Limitations

One limitation of this study was the use of a

convenience sampling method, which may make it difficult to generalize the research findings. Furthermore, using self-report techniques for completing the questionnaires may cause some older patients not to answer honestly. However, by giving essential explanations about the objectives of the study and assurances of confidentiality of information, it was attempted to reduce this limitation.

Conclusion

This study demonstrated the moderate to large effects of skin diseases among the majority of older patients. Furthermore, findings showed that several factors can affect the HRQoL of older patients with skin diseases. Economic situation, type of skin disease, history of psychological or physical conditions, and duration of skin disease were found as predictive factors of HRQoL in this group of patients.

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