Original Article

Evaluation of Quality of Life and Self Efficacy Perception in Chronic Diseases

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Abstract

Background: Chronic diseases with high prevalence and mortality rates negatively affect individuals' quality of life and perceptions of self-efficacy.

Aim: The study aimed to evaluate the perceptions of self-efficacy and quality of life in individuals with chronic diseases and determine their needs.

Method: This study was descriptive research. The research was conducted in the internal medicine, neurology, chest diseases, and cardiology clinics of two state hospitals. The research sample consisted of 130 patients.Data tools were the Patient Information Survey, the Strategies Used by Patients to Promote Health scale, and the SF-36 Quality of Life Scale.

Results: The patients were male (53.8%), and 45.4% were older than 70. The Stress Reduction subscale of the self-efficacy scale score was 29.95 ± 11.99, the Making Decision subscale score was 8.90 ± 3.62, and the Positive Attitude subscale score was 49.73 ± 18.92. The self-efficacy scale score was 88.58 ± 33.80. Perception of self-efficacy was moderate in individuals with chronic disease. Physical Role, General Health, and Bodily Pain sub-dimensions were the most negatively affected. Physical Functioning, Social Functioning, and Energy dimensions were moderately affected. Analysis revealed a positive correlation between self-efficacy scale total scores and SF-36 Quality of Life Scale scores ($r = 0.45\text{-}0.99$, $p = 0.000$).

Conclusions: Individuals with chronic diseases need support in managing physical problems, activities of daily living, and coping with symptoms. In addition, to improve the quality of life, it is recommended to determine stressors and provide counseling on stress management.

Keywords: Chronic diseases; self-efficacy perception; quality of life; patient

Background

Coronary diseases, cerebrovascular diseases, cancer, diabetes, and chronic lung diseases account for approximately 71% of deaths globally (WHO Noncommunicable Diseases Progress Monitor, 2020; WHO Noncommunicable Diseases Key Facts, 2021). Physical, social, psychological, and occupational limitations faced in chronic diseases with high prevalence and mortality rates negatively affect individuals' quality of life and self-efficacy perceptions, making it difficult to comply with their treatments. Today, the importance of lifestyle changes to control the risk factors in chronic diseases is emphasized (Kavradam & Ozer, 2018).

For this reason, the adoption of healthy lifestyle habits and the perceived self-efficacy of individuals are crucial for the effective management of chronic diseases. Therefore, evaluating the self-efficacy perception of chronic patients provides important data for managing chronic diseases (Peters et al., 2019). Therefore, the self-efficacy perception of individuals with chronic health problems must be supported to improve their self-management skills (Farley, 2020).

Life quality is used to evaluate chronic diseases and treatment results (Samiei Siboni et al., 2019). Chronic patients need to develop their skills to cope with the disease and assume an active role in self-management due to the long disease period, the difficulty of self-recovery, complicated etiology, complications, and high cost of treatment. Several social and psychological factors may negatively affect the life quality of patients with chronic health problems (Yuan et al., 2021). Self-efficacy perception and self-management skills are affected negatively in individuals with chronic disease (Cheng et al., 2019). It is suggested in several studies that increased self-efficacy in chronic patients affects the quality of life positively (Lee and Oh, 2020; Farley, 2020; Samiei Siboni et al., 2019; Peters et al., 2019).

Awareness about patients' self-efficacy with chronic diseases is important in identifying patients who need self-management support. Self-management support for patients with chronic diseases is good care quality (Peters et al., 2019). Nurses have important roles in the care provided to individuals with chronic diseases. To effectively manage chronic diseases, patients must be informed about their disease and trained about applications that might improve their self-management skills. It is known that such training effectively improves patients' self-efficacy, self-management skills, and ability to cope with disease (Chan, S. W.-C., 2021). It improves patients' self-efficiency, facilitates their adaptation to treatment, contributes to the prevention of acute and chronic complications, enhances physical capability and life quality (Karakoç Kumsar and TaskIn Yilmaz, 2014). Also, studies dealing with perceived self-efficacy and the life quality of individuals with chronic disease provide important data in developing education programs and strategies for patients' requirements.

Therefore, this study aims to evaluate the life quality and perceived self-efficacy of individuals with chronic disease and identify their support requirements.

Methods

Identifying the research question

Research questions are below:

1. How is self-efficacy perception affected in individuals with chronic disease?

2. How is life quality affected in individuals with chronic disease?

3. Is self-efficacy perception correlated to personal features in individuals with chronic disease?

4. Is life quality correlated to personal features in individuals with chronic disease?

5. Is there a relationship between self-efficacy perception and life quality in individuals with chronic disease?

Research Design: The present study had a cross-sectional design.

Setting: The study was carried out in two-state hospitals' internal disease, neurology, chest diseases, and cardiology clinics.

Research Population and Sample: The study population included patients who stayed in internal diseases, neurology, chest diseases, and cardiology clinics of two state hospitals. Using the sample formula, sample size was calculated as n = $(1,96)^2$ $(0,08)$ $(0,92)$ / $(0,05)^2$ = 113 for this universe that did not have a homogenous structure. The researchers aimed to include 240 patients, 60 patients from each chronic disease (DM, CVD, COPD, and CHF). One hundred thirty patients were involved in the study sample according to the following criteria;

• Being 18 or older,

• Being still treated or monitored for at least one of the DM, CVD, COPD, or CHF diagnoses,

• Being able to speak Turkish, having no communication problems,

• Having no psychiatric disease history,

• Having a suitable general condition for the interview,

• Being a volunteer to participate in the research.

Data Collection Tools: Data were collected with the Patient Description Survey, Strategies used by Patients to Promote Health Scale (SUPPH-29), and SF-36 Life Quality Scale.

Patient Description Survey: It includes 21 questions related to the socio-demographic features and diseases of the patients. Socio-

demographic features include the patient's age, gender, marital status, educational status, perceived income level, working status, and cigarette-alcohol habit.

Strategies Used by Patients to Promote Health (SUPPH) Scale: The scale was developed by Lev and Owen (1996) to evaluate patients' self-confidence in realizing the strategies used for improving health. It is a self-report scale. The Scale has a 5-Likert style and consists of three sub-dimension and 29 items (Akin, 2007; Akin et al., 2009). Each item is evaluated with a score from 1 to 5 (1 = "very little" – 5 = "quite much"). The minimum scale score is 29, and the maximum score is 145. The increased score indicates an increase in self-efficacy level. The Cronbach Alpha Coefficients of the scale are between 0.74-0.93 for sub-dimensions and 0.92 for the total Scale (Akin et al., 2009).

The 36-Item Short-Form Health Survey [SF-36])*:* In 1987, Ware and Sherbourne developed the scale to evaluate health policies in the general population. Health Survey is an individual evaluation scale that 14-year-old or older individuals can answer on their own or with the assistance of a researcher (Ware and Sherbourne, 1992). Health Survey (SF-36) was adapted to the Turkish community in 1995 by Pınar. The Cronbach Alpha value of the Scale's Turkish version is 0.92. It consists of 8 sub-dimensions (Physical Functionality, Physical Role, Bodily Pain, General Health, Social Functionality, Vitality, Emotional Role, and General Mental Health) and 36 items (Ware and Sherbourne, 1992). Life field scores related to health range between 0 and 100 on the Scale. An increase in any life field score shows that the life quality related to health is good (Pinar 1995).

Data Collection: The author collected the data in the patient's room of the relevant clinic with face to face interview technique. Interviewing each patient and filling out a questionnaire took approximately 15-20 minutes.

Ethical Considerations: Ethics Board Permission was obtained before the research was initiated (21.06.2019, Number: 07). Permission to collect data was granted from the hospital administration. Permission was obtained from the researchers who tested it for validity and reliability. Verbal and written consent of the patients were received after handing out informed consent.

Statistical Analyses: Data were analyzed with SPSS (Statistical Package for Social Sciences) for Windows 22.0 program. Descriptive statistical methods used in data evaluation were figures, percentile, mean, and standard deviation. In addition, Kurtosis and Skewness values were analyzed to understand whether research variables had a normal distribution.

Quantitative continuous data of two independent groups were compared with independent samples t-test. A One-Way ANOVA test compares continuous quantitative data between three or more independent groups. Scheffe test was administered as a Post-Hoc Analysis to identify the differences after the One-Way ANOVA test. Finally, Pearson correlation analyses and regression analysis were implemented between continuous variables of the research.

Results

Personal characteristics of patients

The personal characteristics of patients are presented in Table 1. More than half of the patients (53.8%) were male, and 45.4% were over 70. More than forty percent (45.4%) were diagnosed with DM (Table 1).

SF-36 Health Survey and Strategies Used by Patients to Promote Health (SUPPH) Scale Scores

Mean scores in Health Survey and Strategies used by Patients to Promote Health (SUPPH-29) Scale are presented in Table 2. In the self-efficacy scale, patients' mean score in the Stress Reduction sub-dimension was 29.95 ± 11.99, and the Making Decision sub-dimension score was 8.90 ± 3.62. The Positive Attitude sub-dimension score was 49.73 ± 18.92, and the SUPPH-29 scale total score was 88.58 ± 33.80 (Table 2).

In Health Survey, the Physical Functioning sub-dimension score was 0.19 ± 34.60; the Physical Role sub-dimension score was 25.39 ± 40.82, the General Health sub-dimension score was 26.00 ± 21.50, and the Bodily Pain sub-dimension score was 35.17 ± 24.93 (Table 3). Social Functioning sub-dimension score was 51.06 ± 30.10; the Emotional Role sub-dimension score was 35.13 ± 41.15, the General Mental Health sub-dimension score was 57.94 ± 21.41, and the Vitality (Energy) sub-dimension score was 36.85 ± 20.72'dir.

Comparison of Strategies used by Patients to Promote Health Scale (SUPPH-29) and SF-36 Health Survey Scores

The scores received in Strategies used by Patients to Promote Health Scale (SUPPH-29), and SF-36 Health Survey were compared. Positive correlation was found between Stress Reduction sub-

dimension and SF 36 Health Survey sub-dimensions (r = 0.42-0.69, p = 0.000). A positive correlation was found between the scores received in the Making Decision sub-dimension of the SUPPH-29 scale and the SF 36 Health Survey (r = 0.34-0.84, p = 0.000). Positive correlation was found between Positive Attitude sub-dimension of SUPPH-29 scale and sub-dimensions of SF 36 Health Survey (r = 0.47-0.97, p = 0.000). Positive correlation was found between SUPPH-29 and SF-36 Health Survey scores (r = 0.45-0.99, p = 0.000).

Comparison of SF 36 Health Survey scores with personal characteristics

Findings related to the comparison of mean scores in the SF 36 Health Survey considering patients' characteristics are presented in Table 3.

Health Survey mean scores of chronic patients at or below the age of 60 were higher than those of individuals at or over 61 (p < 0.05). Mean scores of male patients in the Energy sub-dimension of the Life Quality Scale were lower than the Energy sub-dimension scores of female patients (t = 2.057; p = 0.042).

Health Survey sub-dimension mean scores of single patients were lower than the mean scores of married patients (p < 0.05). In addition, the health survey sub-dimension mean scores of patients whose educational status was high school or above were found to be higher than patients whose educational status was below high school (Except Mental Health sub-dimension) (p < 0.05).

Mean scores of patients who defined their income as low were lower in the Physical and Emotional Role sub-dimension than patients who defined their income as moderate (p > 0.05). In addition, the Health Survey Pain sub-dimension mean scores of patients who did not work were found lower than patients who reported that they worked (p = 0.028). Physical Function, Physical Role, and Social Function sub-dimension mean scores of patients living with their children were lower than patients living with their partners (p < 0.05). Physical Function sub-dimension mean scores of patients who smoked were found to be lower than patients who did not smoke (F = 12.247; p = 0.000;

F = 5.265; p = 0.006). Physical Functionality sub-dimension scores of obese patients (1st degree or above) were lower than patients of normal weight and overweight patients (F = 4.816; p = 0.01). Health Survey General Health sub-dimension scores of patients who had no disease history in addition to the current chronic disease were lower than General Health sub-dimension scores of patients who had an additional disease history (t = -3.128; p = 0.002). Health Survey General Mental Health sub-dimension scores of patients who had no disease history in addition to the current chronic disease were higher than General Mental Health sub-dimension scores of patients who had an additional disease history (t = 2.092; p < 0.05).

Comparison of self-efficacy scale mean scores with personal characteristics.

Findings related to the comparison of mean scores of SUPPH-29 are presented in Table 4. Self-efficacy scale (SUPPH-29) scores obtained by patients younger than 60 were found to be higher than the scores of patients over 60 (p < 0.05). Self-efficacy scale (SUPPH-29) scores of working patients were lower than the scores of patients who did not work (p < 0.05). SUPPH-29 mean scores (excluding the Making Decision sub-dimension) of patients who reported that they stayed twice or more in hospital for the past six months were lower than scores of patients who reported that they stayed only once (p < 0.05) (Table 4).

Discussion

This study indicates that the self-efficacy perception of individuals with chronic disease is moderate. Sub-dimension scores reveal that self-efficacy perception related to decision-making is the most affected dimension in individuals with chronic disease, and self-efficacy perception related to positive behavior is the least affected dimension. Similar to this study, Gruber-Baldini et al. (2017) carried out a study with 1987 patients with chronic disease and found that the mean scores of patients in the Daily Activities, Emotional Status, and Social Life sub-dimensions of the self-efficacy scale were good over the average value (Gruber-Baldini, et al., 2017).

Table 1 Personal characteristics of patients (N=130)

Variables	Frequency (n)	Percent (%)
Age		
≤ 60	37	28.5
61-70	34	26.2
> 70	59	45.4
Gender		
Female	60	46.2
Male	70	53.8
Marital status		
Married	86	66.2
Single	44	33.8
Educational status		
Illiterate	15	11.5
Literate	26	20.0
Primary school	71	54.6
High school and above	18	13.8
Income level perception		
Income as low	37	28.5
Income as moderate	93	71.5
Working status		
Working	33	25.4
Not working	97	74.6
A person living with the patient		
Living with his wife	68	52.3
Living with her children	42	32.3
Lives alone	20	15.4
Smoked		
Uses	41	31.5
Not using	50	38.5
Left	39	30.0
Alcohol consumed		
Uses	20	15.4
Not using	86	66.2

Left	24	18.5
Classification by Body Mass Index		
Normal weight	45	34.6
Overweight	59	45.4
Obese (I, II, and III degree obesity)	26	20.0
Duration since diagnosis of chronic illness		
Three years and below	53	40.8
4-6 years	34	26.2
Seven years and above	43	33.1
Second disease history other than primary chronic disease		
No	115	88.5
Yes (Kidney stone, atrial fibrillation, chronic kidney failure, hernia)	15	11.5
State of knowledge about the disease		
Yes	107	82.3
Partially	23	17.7
History of hospitalization in the last six months		
No admission	93	71.5
Admitted	37	28.5
Number of hospitalizations in the last six months		
One time	24	64.9
≥ 2 times	13	35.1

Table 2. SF-36 Health Survey and Strategies Used by Patients to Promote Health (SUPPH) Scale Scores

	N	Mean ± SD
SF-36 Quality of Life Scale Sub-dimensions		
Physical Functioning	130	50.19 ± 34.60
Physical Role	130	25.39 ± 40.82
Bodily Pain	130	35.17 ± 24.93
General Health	130	26.00 ± 21.50

Vitality	130	36.85 ± 20.72
Social Functioning	130	51.06 ± 30.10
Emotional Role	130	35.13 ± 41.15
General Mental Health	130	57.94 ± 21.41
Strategies Used by Patients to Promote Health (SUPPH) Scale Sub-dimensions		
Stress Reduction	130	29.95 ± 11.99
Making Decision	130	8.90 ± 3.62
Positive Attitude	130	49.73 ± 18.92
Total	130	88.58 ± 33.80

Table 3. Comparison of Mean Scores in SF 36 Health Survey Considering Patients' Descriptive Characteristics (N = 130)

Descriptive characteristics		n	Physical Functioning	Physical Role	Bodily Pain	General Health	Vitality	Social Functioning	Emotional Role	General Mental Health
Age			*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*
$\leq 60_1$		37	74.73 ± 30.57	47.30 ± 46.69	48.32 ± 26.43	39.51 ± 21.60	50.00 ± 16.58	70.61 ± 26.22	55.86 ± 42.35	67.78 ± 19.07
$61\text{-}70_2$		34	49.41 ± 32.93	22.06 ± 39.30	31.68 ± 19.21	22.41 ± 17.97	36.62 ± 18.74	46.32 ± 24.91	30.39 ± 42.14	55.88 ± 17.96
$>70_3$		59	35.25 ± 29.24	13.56 ± 31.94	28.93 ± 24.13	19.59 ± 19.71	28.73 ± 20.16	41.53 ± 29.77	24.86 ± 35.34	52.95 ± 22.83
	F		18.923	8.887	8.141	12.217	14.501	13.318	7.429	6.120
	p		0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.001*	0.003*
	PostHoc		1>2, 1>3, 2>3	1>2, 1>3	1>2, 1>3	1>2, 1>3	1>2, 1>3	1>2, 1>3	1>2, 1>3	1>2, 1>3
Gender			*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*
Female		60	51.17 ± 37.74	25.83 ± 41.42	35.00 ± 25.68	28.28 ± 22.63	40.83 ± 21.87	56.46 ± 31.93	36.67 ± 43.27	61.33 ± 19.06
Male		70	49.36 ± 31.93	25.00 ± 40.60	35.31 ± 24.46	24.04 ± 20.43	33.43 ± 19.18	46.43 ± 27.84	33.81 ± 39.52	55.03 ± 22.98
	t		0.296	0.116	-0.071	1.122	2.057	1.913	0.393	1.686
	p		0.77	0.91	0.94	0.26	0.042*	0.06	0.70	0.09
Marital status			*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Ort±SS*
Married		86	59.88 ± 32.46	32.85 ± 43.94	39.91 ± 24.18	29.62 ± 20.91	42.04 ± 18.04	59.30 ± 28.32	42.25 ± 42.91	61.35 ± 19.92
Single		44	31.25 ± 30.90	10.80 ± 29.23	25.91 ± 24.02	18.93 ± 21.08	26.71 ± 22.02	34.94 ± 27.04	21.21 ± 33.79	51.27 ± 22.86
	t		4.836	3.004	3.130	2.749	4.248	4.711	2.832	2.595
	p		0.000*	0.001*	0.002*	0.007*	0.000*	0.000*	0.003*	0.011*
Educational status			*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*
Illiterate $_1$		15	40.67 ± 29.63	16.67 ± 34.93	20.27 ± 18.01	19.13 ± 18.91	32.67 ± 17.61	37.50 ± 23.62	13.33 ± 27.60	54.40 ± 19.87
Literate $_2$		26	35.77 ± 31.55	1.92 ± 6.79	24.12 ± 20.94	17.54 ± 20.93	25.00 ± 19.18	37.98 ± 27.27	19.23 ± 30.07	49.23 ± 18.62
Primary school $_3$		71	52.75 ± 33.35	26.06 ± 40.85	38.14 ± 24.78	28.42 ± 20.92	39.23 ± 18.00	53.35 ± 28.34	37.09 ± 39.26	60.39 ± 20.24

	N								
High school and above [4]	18	68.89 ± 39.05	63.89 ± 47.14	51.83 ± 23.73	34.39 ± 22.71	48.06 ± 27.18	72.22 ± 33.09	68.52 ± 50.45	63.78 ± 27.73
F		4.030	10.249	7.487	3.227	5.660	6.487	7.751	2.403
p		0.009*	0.000*	0.000*	0.025*	0.001*	0.000*	0.000*	0.07
PostHoc		4>1, 3>2, 4>2	4>1, 3>2, 4>2, 4>3	3>1, 4>1, 3>2, 4>2, 4>3	4>1, 3>2, 4>2	4>1, 3>2, 4>2	4>1, 3>2, 4>2, 4>3	3>1, 4>1, 3>2, 4>2, 4>3	
Income level perception		*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*
Income as low	37	43.78 ± 29.89	11.49 ± 26.08	32.57 ± 22.33	25.49 ± 22.93	32.97 ± 17.70	50.34 ± 28.94	18.92 ± 31.95	58.92 ± 21.86
Income as moderate	93	52.74 ± 36.14	30.91 ± 44.29	36.20 ± 25.94	26.20 ± 21.02	38.39 ± 21.70	51.34 ± 30.70	41.58 ± 42.75	57.55 ± 21.34
t		-1.336	-2.498	-0.749	-0.171	-1.349	-0.171	-2.914	0.328
p		0.15	0.003*	0.46	0.86	0.18	0.86	0.001*	0.74
Working status		*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*
Working	33	78.18 ± 23.18	53.03 ± 48.72	40.27 ± 20.62	32.94 ± 20.54	45.30 ± 20.91	64.39 ± 25.60	59.60 ± 40.62	66.30 ± 22.67
Not working	97	40.67 ± 32.70	15.98 ± 33.11	33.43 ± 26.11	23.64 ± 21.40	33.97 ± 19.95	46.52 ± 30.28	26.80 ± 38.08	55.09 ± 20.31
t		6.084	4.887	1.366	2.178	2.785	3.039	4.201	2.658
p		0.000*	0.000*	0.13	0.031*	0.006*	0.003*	0.000*	0.009*
The person living with the patient		*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*
Living with his wife [1]	68	58.68 ± 31.99	34.93 ± 44.50	40.21 ± 24.59	28.97 ± 20.52	41.03 ± 18.46	59.01 ± 29.36	41.67 ± 44.00	61.94 ± 18.84
Living with her children [2]	42	39.64 ± 36.77	13.69 ± 32.76	28.26 ± 23.05	22.12 ± 21.99	31.67 ± 20.62	43.75 ± 30.27	26.98 ± 33.93	52.38 ± 22.61
Lives alone [3]	20	43.50 ± 32.45	17.50 ± 36.36	32.55 ± 27.20	24.05 ± 23.23	33.50 ± 25.72	39.38 ± 25.42	30.00 ± 43.12	56.00 ± 25.06
F		4.614	4.147	3.216	1.426	3.055	5.470	1.860	2.758

p		0.012*	0.018*	0.043*	0.24	0.05	0.005*	0.16	0.07
PostHoc		1>2	1>2	1>2			1>2, 1>3		

Number of children		*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*
0-1	24	48.33 ± 34.88	19.79 ± 37.58	28.58 ± 24.99	21.46 ± 20.80	40.83 ± 23.34	47.92 ± 26.50	36.11 ± 40.43	56.33 ± 18.72
2-3	89	55.39 ± 33.98	30.62 ± 43.59	37.11 ± 24.11	27.18 ± 21.69	36.74 ± 19.93	52.53 ± 30.51	38.58 ± 42.61	58.29 ± 21.57
≥4	17	25.59 ± 27.49	5.88 ± 18.81	34.29 ± 28.83	26.24 ± 21.81	31.77 ± 20.99	47.79 ± 33.73	15.69 ± 29.15	58.35 ± 25.10
F		5.728	2.986	1.120	0.667	0.957	0.333	2.260	0.082
p		0.004	0.054	0.33	0.52	0.39	0.72	0.11	0.92
PostHoc=		1>3. 2>3							

Classification by Body Mass Index		*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*
Normal weight $_1$	45	56.56 ± 34.04	32.78 ± 45.17	35.09 ± 26.49	28.36 ± 22.78	37.89 ± 20.46	52.78 ± 32.74	40.00 ± 42.40	60.18 ± 22.38
Overweight $_2$	59	53.31 ± 33.50	24.15 ± 39.93	35.83 ± 23.69	22.68 ± 19.14	35.76 ± 19.80	50.64 ± 25.79	35.59 ± 39.57	56.14 ± 20.92
Obese (I, II and III degree obesity)$_3$	26	32.12 ± 33.17	15.39 ± 33.22	33.81 ± 25.84	29.46 ± 23.92	37.50 ± 23.72	49.04 ± 35.16	25.64 ± 42.49	58.15 ± 21.26
F		4.816	1.558	0.059	1.318	0.149	0.136	1.010	0.453
p		0.010*	0.21	0.94	0.27	0.86	0.87	0.37	0.64
PostHoc		1>3, 2>3							

Second disease history other than primary chronic disease		*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*
No	115	50.91 ± 34.65	25.44 ± 41.36	33.83 ± 24.71	23.94 ± 20.09	36.78 ± 20.43	50.54 ± 29.45	33.62 ± 40.10	59.34 ± 20.20
Yes	15	44.67 ± 34.97	25.00 ± 37.80	45.47 ± 25.05	41.80 ± 25.89	37.33 ± 23.59	55.00 ± 35.61	46.67 ± 48.47	47.20 ± 27.64
t		0.656	0.039	-1.713	-3.128	-0.096	-0.538	-1.156	2.092

p		0.51	0.97	0.09	0.002*	0.92	0.59	0.33	0.038*
Source of information about the disease		*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*
Health personnel	108	46.20 ± 34.08	21.30 ± 38.19	33.99 ± 24.80	25.25 ± 20.81	36.20 ± 20.59	49.42 ± 29.07	31.17 ± 40.06	56.85 ± 21.60
Internet and other	22	69.77 ± 30.88	45.46 ± 47.96	40.96 ± 25.36	29.68 ± 24.77	40.00 ± 21.55	59.09 ± 34.33	54.55 ± 41.84	63.27 ± 20.08
t		-3.001	-2.585	-1.196	-0.881	-0.782	-1.378	-2.476	-1.285
p		0.003*	0.035*	0.23	0.38	0.44	0.17	0.015*	0.20
Number of hospitalizations in the last six months		*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*
Once	24	53.54 ± 32.92	22.92 ± 40.99	37.13 ± 30.38	26.75 ± 22.82	34.38 ± 19.91	47.40 ± 31.06	34.72 ± 44.48	59.33 ± 20.92
≥ 2 times	13	24.62 ± 34.25	9.62 ± 28.02	26.77 ± 26.17	21.31 ± 23.87	34.62 ± 25.12	45.19 ± 35.92	20.51 ± 34.80	47.39 ± 23.14
t		2.516	1.042	1.037	0.682	-0.032	0.195	0.996	1.598
p		0.017*	0.30	0.31	0.50	0.98	0.85	0.33	0.12

t = Independent Samples t test, F= One-Way Anova *p < 0.05

Table 4. Comparison of self-efficacy scale mean scores in terms of patients' characteristics (N = 130)

	n	Stress Reduction sub-dimension	Making Decision sub-dimension	Positive Attitude sub-dimension	Total
Descriptive characteristics					
Age		*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*
$\leq 60_1$	37	36.70 ± 10.53	10.73 ± 3.20	59.89 ± 16.58	107.32 ± 29.36
$61\text{-}70_2$	34	28.24 ± 11.51	8.53 ± 3.62	47.38 ± 17.56	84.15 ± 31.49
$>70_3$	59	26.70 ± 11.57	7.97 ± 3.49	44.71 ± 18.85	79.37 ± 33.47
F		9.497	7.571	8.575	9.209
p		0.000*	0.001*	0.000*	0.000*
Post Hoc		1>2. 1>3	1>2. 1>3	1>2. 1>3	1>2. 1>3
Working status		*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*
Working	33	37.24 ± 9.83	10.76 ± 3.51	60.12 ± 16.10	108.12 ± 28.99
Not working	97	27.46 ± 11.68	8.27 ± 3.45	46.20 ± 18.57	81.93 ± 32.85
t		4.315	3.565	3.842	4.070
p		0.000*	0.001*	0.000*	0.000*
Hospitalizations in the last six months		*Mean ± SD*	*Mean ± SD*	*Mean ± SD*	*Mean ± SD*
Once	24	30.38 ± 10.57	8.79 ± 3.09	49.38 ± 16.45	88.54 ± 29.40
≥ 2 times	13	20.31 ± 9.16	7.31 ± 3.66	37.00 ± 16.35	64.62 ± 27.97
t		2.891	1.307	2.189	2.403
p		0.007*	0.20	0.035*	0.022*

t = with independent samples t-test; F = One-Way ANOVA test * $p < 0.05$.

In contrast, Almutary and Tayyib (2020) carried out another study with 85 patients with chronic disease and found that their total mean score on the self-efficacy scale was below the average value (Almutary, Tayyib, 2020). Nurses significantly increase self-efficacy by implementing a comprehensive training program based on a patient-oriented approach. However, more studies are necessary to evaluate training results, identify negative aspects of training and plan the intervention to improve self-efficacy.

Mean scores in this study indicate that physical role, general health, and physical pain sub-dimensions are the most negatively affected dimensions in individuals with chronic disease. Physical functionality, social functionality, and energy sub-dimensions are moderately affected in individuals with chronic disease. These results show that individuals with chronic diseases need to be supported in many aspects of symptom control and life quality. It draws attention to the fact that nurses must evaluate all aspects of life quality of individuals with chronic disease for effective management of treatment and care process. Similarly, van Rotterdam et al. (2021) studied the life quality of patients undergoing cardiac and pulmonary rehabilitation with an SF-36 scale. They found that Mental Health and Physical Functionality sub-scales positively affected the quality of life (van Rotterdam, Hensley, Hazelton, 2021). In another study, Arian et al. (2019) found that the Social Functionality and Physical Functionality sub-dimension scores of beta-thalassemia major (β-TM) patients were good over the average value (Arian, et al., 2019). The chronic disease process affects daily life activities and roles such as walking, heavy lifting, shopping, working, and other activities. Developing coping mechanisms in the diagnosis and care process influence patients' general health status perception and life quality.

A positive relationship was found between the Stress Reduction sub-dimension of the self-efficacy scale and all SF 36 Health Survey sub-dimensions. Finding a positive correlation between scores makes one think that strengthening individuals' self-efficacy perception will positively affect life quality.

Thus, identifying individual and disease-related factors that cause stress training patients on stress management might be recommended to improve their life quality. In a scale development study to identify the self-efficacy level of patients diagnosed with Diabetes Mellitus, Allam et al. (2020) found a significant correlation between life quality and daily life activities' emotional stress caused by the disease (Allam, et al., 2020). Gruber-Baldini et al. (2017) studied the self-efficacy of 837 individuals with chronic disease and found a significant correlation between stress and fatigue and all sub-dimensions of the Health Survey (Gruber-Baldini, et al., 2017). Therefore, to improve the life quality of individuals, it might be recommended to identify individual and disease-related factors that cause stress, train patients on stress management, and provide them counseling services.

A positive relationship was found between the Making Decision sub-dimensions of the SUPPH-29 Scale and all SF 36 Health Survey sub-dimensions. The correlation between scores makes one think that successfully deciding to carry out a task affects motivation, plans, and life quality. Similar to our study, Selzler et al. (2020) evaluated the self-efficacy perception and life quality of individuals with Chronic Obstructive Pulmonary Disease (COPD) and found a moderate positive correlation between their life quality and making decisions about their health status (Selzler, et al., 2020). In a study on the relationship between life quality and self-efficacy in coping with cancer, Chirico et al. (2017) compared individuals who had the advanced capability in making decisions to individuals with the inadequate capability and concluded that they displayed less anxiety and more adaptive behavior (Chirico, et al., 2017). According to these results, involving individuals with chronic disease in decision-making during the disease, treatment, and care process will positively affect self-efficacy perception and life quality. Therefore, it is recommended that patients have knowledge of treatment plans and care requirements such as wise drug usage, nutrition, and exercise habits and get involved in the decision-making process.

The current study found a positive relationship between the SUPPH-29 scale and the SF 36 Health Survey scores. To summarize, correlation coefficients indicate a positive correlation between self-efficacy perception and life quality. Therefore, it is recommended that positive feedback be given to individuals with the chronic disease about positive lifestyle habits and attitudes in disease management.

Life quality mean scores of chronic patients at or below the age of 60 were lower than in other age groups. It was observed that life quality scores dropped with age, and the life quality of patients at or over the age of 70 was most negatively affected. Life quality drops with age, indicating that 60 years old or older patients with a chronic disease need more support to improve their life quality. Similarly, Selzler et al. (2020) studied the self-efficacy perception and life quality of individuals with Chronic Obstructive Pulmonary Disease. They reported that the life quality scale total score of older patients was lower than younger patients (Selzler, et al., 2020).

Scores of male patients with chronic disease in the Energy (Vitality) sub-dimension of the Health Survey were lower than those of female patients. Higher scores of women in the Energy (vitality) sub-dimension might be attributed to the individual and disease-related features. Similar to our study, Almutary and Tayyib (2020) carried out a study involving 85 patients with chronic disease and reported that the life quality of female patients was better than that of male patients. Scores of female patients in the Physical Activity sub-dimension of the self-efficacy scale were also statistically significant (Almutary, Tayyib, 2020). Allam et al. (2020) reported that male and female patients' self-efficacy perception and life quality were at a moderate level (Allam, et al., 2020). To understand the problems of male patients' experience with the Energy (vitality) dimension might be understood their adaptation, it is important to gather more detailed information about the symptom management and social support. Scores of patients with high school or over educational status in sub-dimensions of the Health Survey (excluding the mental health sub-dimension) were higher than patients whose educational status was below high

school. In a study dealing with factors related to self-efficacy level and life quality of 200 patients diagnosed with epilepsy in Turkey, Adadioglu and Oguz (2021) reported that the Health Survey scale mean scores of patients who were graduates of university were higher than patients who were graduates of primary school and high school (Adadioglu & Oguz, 2021). In a scale development study to identify the self-efficacy level of patients diagnosed with Diabetes Mellitus, Allam et al. (2020) found out that the self-efficacy scale total scores of patients who were graduates of high school were higher than patients who only knew to read and write (Allam, et al., 2020). Therefore, we might recommend strengthening the adaptation of patients with lower educational status to disease and treatment regime, cooperating with the family to improve adaptation to the disease, and educating and monitoring these patients closely.

Physical and Emotional Role sub-dimension scores of patients who defined their income as low were found lower than scores of patients who defined their income and expenditure as balanced. Similarly, in a study dealing with factors related to self-efficacy level and life quality of 200 patients diagnosed with epilepsy in Turkey, Adadioglu and Oguz (2021) found out that the Health Survey total scores of individuals with a moderate level of income were higher than the scores of individuals who had lower or higher income (Adadioglu & Oguz, 2021). In a study dealing with self-efficacy and life quality of individuals with a chronic disease, Almutary and Tayyib (2020) reported that the life quality of individuals with a moderate monthly income was significant in the physical activity sub-dimension (Almutary & Tayyib, 2020).

Conclusions: The study indicates that individuals with chronic disease have moderate self-efficacy perception. Physical Role, General Health, and Physical Pain sub-dimensions of life quality were the most negatively affected dimensions, and Physical functionality, social functionality, and energy dimensions were moderately affected. A moderate-strong correlation was observed between self-efficacy and life quality. Self-efficacy levels and life quality of single, unemployed, obese individuals older than 60

who had low income and stayed in the hospital were negatively affected. The current results revealed the importance of monitoring the self-efficacy level and life quality of single, unemployed, obese individuals older than 60 who have low income and often stay in the hospital. Educational and counseling support is needed to enhance self-efficacy and life quality.

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