



RESEARCH ARTICLE

Evaluation of vision-related quality of life in individuals with vision loss

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Abstract

The research was carried out as prospective cross-sectional and descriptive in order to evaluate the quality of life and affecting factors related to vision in individuals with vision loss in various dimensions. The population of the study consisted of all patients (308) with vision loss who were hospitalized in the eye service of a training and research hospital affiliated to the Ministry of Health of the Republic of Turkey between 03.03.2011 and 03.06.2011, and the sample consisted of 247 patients who met the sampling criteria and agreed to participate in the study. The Patient Identification Form and the National Institute of Eye Health Visual Function Questionnaire (NEI-VFQ 25) were used for data collection. In data analysis; frequency, percentile, mean, standard deviation, Kolmogorov-Smirnov distribution test, Mann Whitney U and Kruskal Wallis tests were used. As a result of the research; The Cronbach's Alpha value of the NEI-VFQ 25 was found to be reliable as 0.97. Considering that the mean scores of the patients from the subscales of the NEIVFQ 25 ranged between 38.77 ± 15.43 - 76.64 ± 30.47 , the mean total score was 56.72 ± 21.59 , and the highest possible score was 100, it was determined that their visual-related quality of life was low. It has been determined that the quality of life related to vision is lower in female gender and individuals with a high degree of vision loss in the well-sighted eye.

Keywords: Vision loss, vision-related quality of life, nursing.

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1 | INTRODUCTION

Our eyes, which are of great importance in our sensory system, serve as a window to form an image. (Okka 2007). Used as a general term, vision loss is a definition that includes total (blindness) or partial (low vision) loss of vision and includes blindness or functional vision loss (Ceyhan 2006). Visual acuity is the ability to see details. Visual acuity plays a very important role in many daily life activities such as being able to select faces and recognizing money. Determination of visual acuity has become the standard method used to evaluate patients' vision loss (Zhang et al 2008). In recent years, the concept of quality of life (QOL), which is frequently mentioned in nursing science, has been increasingly accepted in evaluating the results of nursing interventions. Strive for the quality of nursing life, comforting the patient, giving appropriate care and all within the scope of nursing; It is a science that aims to raise the state of well-being, which includes the biological, physiological, psychological and socio-cultural aspects of life (Savcı 2007). The concept of vision-related quality of life (VRQL) emerged from the idea of investigating the effect of visual impairment on daily functions. VRQL is measured to concretely describe the affectivity related to visual impairment, such as the feeling of inability to perform some vision-related functions. Today, the need for patient-based subjective visual function evaluations is increasing for the evaluation of treatment results and demographic data in eye diseases (Savar 2009). The eye, which is the entrance place for 80% of the information reaching our brain, functions as a transmission path. Measuring the function of the eye, the most perfect and subtle of our senses, is very subtle and versatile (Aydın ve Bayraktar 2007). The success of care and treatment in eye diseases is evaluated with certain and measurable objective criteria. Visual acuity is the most used objective measure in eye diseases. Visual acuity is the most used objective measure in eye diseases. Although visual acuity is an important measure for measuring a multidimensional function such as vision, it does not provide information on how patients' lives are affected by visual function.

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It is the fact that daily activities are often affected by the sight that pushes the patient to seek care and treatment. Measuring visual acuity alone cannot assess post-treatment functional recovery, changes in daily activities, or visual satisfaction (Bayraktar 2008). Vision loss negatively affects people's quality of life (LQ) by creating difficulties in many daily living activities such as dressing, eating, writing, mobility, and communication (Demirhan 2009).

The concept of vision-related quality of life (VRQL) emerged from the idea of investigating the effects of eye diseases and their treatments on the daily lives of patients. Questionnaires measuring VRQL have been developed to concretely describe situations such as affect due to visual impairment, such as the feeling of inability to perform some functions related to vision (Savar 2009). Nursing is a health discipline based on deciding and analyzing various options together with the healthy/sick individual, by considering the human being at any point in the process, starting with fertilization, from birth to death, and for realizing functions and life activities in a healthy way. The main purpose of nursing; to provide the well-being of the individual, family and society, to protect the health, to prevent the disease, to improve in case of illness / illness, to teach / facilitate coping methods. The nurse achieves these goals by combining her knowledge, skills and critical thinking ability with her professional values and philosophy, and by using her ethical and legal powers and responsibilities, which are the building blocks of nursing practices. In addition, by integrating nursing, scientific and artistic aspects, the nursing process, education and nursing theories, it is ready for presentation to the individual and society with its health, improving, protective and curative care services (Güven 2010).

2 | MATERIALS AND METHODS

Purpose and Type of Research

The research was planned as a prospective cross-sectional and descriptive study to evaluate the quality of life and affecting factors related to vision in individuals with vision loss in various dimensions.

Place and Time of Research

The research was carried out between 03.03.2011 and 03.06.2011 in the eye service of an education and research hospital affiliated to the Ministry of Health in Istanbul in the Republic of Turkey.

Research Population and Sample Selection

The population of the study consisted of all patients (308) who were hospitalized in the eye service of a training and research hospital in Istanbul between the study dates (except for strabismus and oculoplasty patients), and the sample consisted of all patients with vision loss due to eye disease, who met the inclusion criteria and agreed to participate in the study (247) formed patients. 51 patients were excluded from the sample because they did not meet the inclusion criteria and 80% of the population was included in the study.

Inclusion Criteria

Field criteria in the selection of the sample group; It was determined as being older than 18 years of age, not having a physical disability that would affect the quality of life, not having any psychological disorders, not having any communication barriers, knowing Turkish, and agreeing to participate in the research.

Data Collection

Data Collection Tools: The following forms were used in data collection.

a) Patient Diagnosis Form: It is a form developed by the researcher in the light of literature knowledge, consisting of questions about the introductory characteristics and disease states of patients with vision loss.

b) National Institute of Eye Health Visual Function Questionnaire (NEI-VFQ 25): It was developed by Mangione et al to determine vision problems and how these problems affect quality of life. Firstly, a 51-question version was prepared (Mangione et al 1998). In terms of clinical ease of use, a 25-question version was developed by Mangione et al. in 2001 in the USA on a group of 597 patients aged 21 and over. The fields of this survey are; General Health (GH), General Vision (GV), Eye Pain (EP), Near Activity (NA), Distant Activity (DA), Visually Related Social Function (VRSF), Vision Related Mental Health (VRMH), Vision Related Role Difficulties (VRRD), Vision-Related Addiction to Others (VRAO), Automobile Driving (AD), Color Vision (CV) and Peripheral Vision (PV) and the total mean score to be obtained from the questionnaire are listed as Total Score (TS). Throughout the questionnaire, there are 25 questions questioning patient complaints and performance in these areas (Toprak et al., 2005).

The validity and reliability studies of the Turkish translation of the NEI-VFQ 25 questionnaire by Toprak et al. (2005) were performed on 61 patients (Cataract n:35, Glaucoma n:6, Diabetic Retinopathy n:8, Age Related Macular Degeneration n:7 and Degenerative Myopia n:5).

It has been determined that this translation has sufficient sensitivity in terms of discrimination according to the severity of the disease in those with the disease in question. It is applied by the researcher or by the patient's own reading. In some questions, the patient is asked to score on vision and health, while some questions require qualitative evaluation. The Cronbach Alpha value, which is an internal consistency indicator for the overall questionnaire, is 0.97.

Data Collection Method and Process

The patient diagnosis form prepared for the study and the NEI-VFQ were applied in a quiet room with face-to-face interview method before the hospitalization and surgery of 25 patients. If the patients used glasses or contact lenses, they were asked to answer the questions using these. Before visual acuity measurement, refraction error was measured with an autorefractometer in all patients. The best corrected visual acuities for both eyes were measured with Snellen and her chart and the decimal value was taken as the basis. The visual acuity of the patients was classified as the visual acuity of the better seeing eye, according to the International Council of Ophthalmology.

Evaluation of Data

While evaluating the findings obtained in the study, statistical package program was used for statistical analysis. The obtained data were coded and evaluated in the SPSS (Statistical Package for Social Sciences) 17.0 package program on the computer. Descriptive statistical methods (Frequency, Percentage, Mean, Standard Deviation) were used when evaluating the study data. Kolmogorov - Smirnov distribution test was used to examine the normal distribution. The Mann Whitney U test was used to compare the quantitative data in the case of two groups, and for the intergroup comparisons of the parameters that did not show normal distribution. In the case of more than two groups, the Kruskal Wallis test was used for the comparison of the parameters that did not show normal distribution, and the Mann Whitney U test was used to determine the group that caused the difference. The results were evaluated bilaterally at 95% confidence interval, significance level of $p < 0.05$.

Ethical Aspect of Research

Prior to the research, approval was obtained from the Marmara University Health Sciences Institute Clinical Research Preliminary Evaluation Commission. Before the research, written permission was obtained from the Istanbul Health Directorate for the institution where the research would be conducted.

Before administering the questionnaires, the purpose, plan and benefits of the study were explained to the participants, it was stated that they were free to decide whether to participate in the study or not, and that they had the right to refuse to provide information. It was explained with the "Patient Information Form" that they could leave the study at any point, and the principle of willingness and volunteering and the principle of autonomy were adhered to. Written informed consent was obtained from the patients with the "Patient Consent Form" and they were included in the study. Confidentiality was adhered to by giving assurances to the individuals participating in the

study that their identities and the personal information they provided would not be disclosed to others.

Limitations of the Research

The limitations of the study are that only visual acuity is checked to evaluate the visual function of individuals, age-related macular degeneration patients, which are among the first of the diseases that cause vision loss, are not included in the study because they are one-day hospitalizations and cannot be evaluated by nurses in the service, and the study is conducted in a single institution.

3 | RESULTS

The results obtained in the study are given in the table 1-4 below.

Table 1. Distribution of Socio-Demographic and Visual Characteristics(n=247)

Introductory Features	Categories	n	%
Gender	Woman	108	43.7
	Male	139	56.3
Age	Age 50 years and under	53	21.5
	51-60 years	89	36.0
	61-70 years	65	26.3
	71 years and older	40	16.2
Level of education	Illiterate	42	17.0
	Literate	16	6.5
	Primary school	130	52.6
	High school	43	17.4
	Bachelor	16	6.5
Marital status	Single	60	24.3
	Married	187	75.7
With whom does he live	Alone	30	12.1
	Family	213	86.3
	Other	4	1.6
Good eyesight degrees	Normal vision	68	27.5
	Mild vision loss	113	45.7
	Moderate vision loss	21	8.5
	Severe/severe vision loss	21	8.5
	Profound vision loss	9	3.6
	Vision loss near blindness	15	6.1

56.3% (n=139) of the individuals participating in the study were male; 36.0% (n=89) 51-60, 26.3% (n=65) 61-70 age group, 52.6% (n=130) primary school graduate, 75.7% (n=187) married It was

determined that 86% (n=213) lived with their families and 45.7% (n=68) had mild vision loss in the well-sighted eye.

Table2. NEI-VFQ-25 Relevant Point Values (n=247)

Subscales	Ort.	S.s	Min.	Max.
GH	45.46	16.07	5.0	82.5
GV	38.77	15.43	10.0	90.0
EP	70.45	23.79	25.0	1.0
NA	49.15	27.76	0,0	1.0
DA	55.54	26.12	8.3	1.0
VRSF	65.71	28.08	8.3	1.0
VRMH	48.03	26.67	0.0	1.0
VRRD	46.94	28.59	0.0	1.0
VRDO	65.00	30.17	0.0	1.0
AD	72.40	24.17	16.7	91.7
CV	76.64	30.47	0.0	1.0
PV	51.62	26.43	0.0	1.0
TS	56.72	21.59	0.0	1.0

When the scale scores are examined; It was determined that the GV subscale had the lowest score with an average of 38.77±15.43 points, the AD

(72.40±24.17) and CV (76.64±30.47) subscales had the highest scores, and the mean score from the total scale was 56.72±21.59 (Table 2).

Findings Concerning the Comparison of Vision-Related Quality of Life and Descriptive Characteristics

Table 3. NEI-VFQ-25 Comparison of Scores by Gender (n=247)

Alt Ölçek	Grup	n	Ort	Ss	MW	p
GH	Woman	108	40.81	13.98	5202.000	0.000
	Man	139	49.07	16.69		
GV	Woman	108	36.86	13.02	6997.500	0.357
	Man	139	40,25	16.98		
EP	Woman	108	62.73	24.35	5085.500	0.000
	Man	139	76.44	21.60		
NA	Woman	108	44.38	22.34	6342.000	0.036
	Man	139	52.85	30.90		
DA	Woman	108	49.72	20.40	5988.500	0.006
	Man	139	60.05	29.10		
VRSF	Woman	108	59.34	23.43	5466.000	0.000
	Man	139	70.65	30.38		
VRMH	Woman	108	37.23	21.59	4436.000	0.000
	Man	139	56.41	27.29		
VRRD	Woman	108	38.60	24.05	5352.500	0.000
	Man	139	53.42	30.20		
VRDO	Woman	108	53.53	30.55	4551.000	0.000
	Man	139	73.92	26.75		
RG	Woman	105	75.71	29.31	6882.000	0.398
	Man	139	77.34	31.41		
PG	Woman	108	46.53	20.35	6278.000	0.021
	Man	139	55.58	29.80		
TS	Woman	108	50.40	18.37	5116.000	0.000
	Man	139	61.63	22.66		

The Mann Whitney U test was used.

It was observed that the mean score of the subscales and the sum of the scale, except for the GG and RG subscales, of the patients participating in the study showed a statistically significant difference according to gender, and the scores of

the female patients were lower than the male patients (p<0.05) (Table 3).No comparison could be made for the AD subscale since women were not driving.

Table 4. NEI-VFQ-25 Comparison of Scores according to Visual Acuity of the Well Seeing Eyes (n: 247)

Subscales	Vision Loss	n	mean	Ss	KW	P	Post hoc
VH	Normal (a)	68	52.61	13.10	25.534	0.000	a vs b,c,d,e,f,
	Mildly (b)	113	44.98	15.82			b vs c
	Moderately (c)	21	35.12	17.91			
	Severe (d)	21	42.50	14.60			
	Deep (e)	9	43.33	10.23			
	Near blindness (f)	15	36.50	19.36			
GV	Normal (a)	68	49.49	14.09	98.668	0.000	a vs b,c,d,e,f,
	Mildly (b)	113	39.96	13.29			b vs c,d,e,f
	Moderately (c)	21	28.57	9.51			c vs e,f
	Severe (d)	21	30.24	10.66			d vs e,f
	Deep (e)	9	17.78	4.41			
	Near blindness (f)	15	20.00	5.00			
EP	Normal (a)	68	68.57	22.80	14.362	0.013	a vs f
	Mildly (b)	113	74.667	22.81			b vs c,f
	Moderately (c)	21	64.88	25.19			d vs f
	Severe (d)	21	72.62	26.40			
	Deep (e)	9	72.22	15.02			
	Near blindness (f)	15	50.83	25.21			
NA	Normal (a)	68	70.40	22.95	110.476	0.000	a vs c,d,e,f
	Mildly (b)	113	52.21	23.72			b vs c, d,e,f
	Moderately (c)	21	24.41	17.40			d vs e,f
	Severe (d)	21	26.49	8.62			
	Deep (e)	9	16.67	3.61			
	Near blindness (f)	15	15.56	11.30			
DA	Normal (a)	68	76.19	20.01	105.666	0.000	a vs b,c,d,e
	Mildly (b)	113	57.50	22.69			b vs c,d, e,f
	Moderately (c)	21	31.83	16.15			d vs f
	Severe (d)	21	36.35	14.95			
	Deep (e)	9	28.61	4.21			
	Near blindness (f)	15	23.33	13.34			
VRSF	Normal (a)	68	84.80	18.44	106.147	0.000	a vs b,c,d,e,f
	Mildly (b)	113	71.06	22.42			b vs c,d,e,f
	Moderately (c)	21	37.50	21.33			c vs f
	Severe (d)	21	47.82	25.33			d vs f
	Deep (e)	9	36.11	11.02			
	Near blindness (f)	15	21.11	14.04			
VRMH	Normal (a)	68	66.18	22.43	72.105	0.000	a vs b,c,d,e,f
	Mildly (b)	113	48.48	24.70			b vs c,d,e,f
	Moderately (c)	21	26.67	18.73			
	Severe (d)	21	36.667	23.68			
	Deep (e)	9	17.778	11.21			
	Near blindness (f)	15	26.33	16.31			
VRRD	Normal (a)	68	71.51	20.44	125.292	0.000	a vs b,c,d,e,f
	Mildly (b)	113	48.95	23.97			b vs c,d,e,f
	Moderately (c)	21	22.32	13.49			c vs e
	Severe (d)	21	24.41	12.01			d vs e,f
	Deep (e)	9	0.69	2.08			
	Near blindness (f)	15	14.17	11.69			
VRDO	Normal (a)	68	88.24	15.18	113.670	0.000	a vs b,c,d,e,
	Mildly (b)	113	68.08	25.69			b vs c,d,e,f
	Moderately (c)	21	43.75	24.37			c vs e,f
	Severe (d)	21	50.60	22.53			d vs e
	Deep (e)	9	18.75	16.24			
	Near blindness (f)	15	14.17	7.27			
AD	Normal (a)	20	80.42	18.39	6.166	0.046	-
	Mildly (b)	11	62.88	25.10			
	Moderately (c)	1	16.67				
	Severe (d)	0					
	Deep (e)	0					
	Near blindness (f)	0					
RG	Normal (a)	65	97.69	10.57	91.010	0.000	a vs b,c,d,e,f

	Mildly (b)	113	80.31	25.32			b vs c,e,f
	Moderately (c)	21	46.43	30.91			d vs e
	Severe (d)	21	65.48	33.98			
	Deep (e)	9	30.56	11.02			
	Near blindness (f)	15	43.33	33.36			
PG	Normal (a)	68	69.12	25.23	72.728	0.000	a vs b,c,d,e,f
	Mildly (b)	113	52.43	24.08			b vs c,d,e,f
	Moderately (c)	21	36.91	20.34			c vs f
	Severe (d)	21	36.91	15.04			d vs e
	Deep (e)	9	25.00	0.00			
	Near blindness (f)	15	23.33	14.84			
TS	Normal (a)	68	74.01	13.98	119.299	0.000	a vs b,c,d,e,f
	Mildly (b)	113	59.31	17.82			b vs c,d,e,f
	Moderately (c)	21	36.27	15.31			c vs e,f
	Severe (d)	21	42.76	13.31			d vs e
	Deep (e)	9	26.42	2.84			
	Near blindness (f)	15	25.22	6.28			

Mann Whitney U test was used as post hoc. after Kruskal Wallis test.

When the scale scores of the patients were compared according to the visual acuity in the well-sighted eye; There was a statistically significant difference in subscale and total scores ($p < 0.05$). In the advanced analysis; All subscale and TS scores of those with normal vision in their well-sighted eyes were found to be significantly higher than the scores of other patients with various degrees of visual loss, except for the GA and EC subscales ($p < 0.05$), (Table 4).

The GV, NA, DA, VRSF, VRMH, VRRD, VRDO, PV, and TS scores of those with mild vision loss in their well-sighted eyes were found to be higher than the scores of those with moderate, severe/intense, deep, near-blind vision loss in their well-sighted eye ($p < 0.05$).

4 | DISCUSSION

43.7% of the patients participating in the study were women. 56.3 of them are male (Table 1). In Çelik's (2008) study, 47.8% were female and 52.2% male. This rate shows similarities with our study. This finding is important in that the number of men and women is close to each other.

21.5% of the patients were under the age of 50 and the others were over the age of 50; 52.2% of the patients are primary school graduates and 6.5% are university graduates. (Table 1). In the study of Çelik (2008), in which he examined the quality of life of glaucoma patients, it was found that 31% of the patients were primary school graduates, 39% were secondary school or high school graduates, and 25% were university graduates (Table 1). It is thought that the lower rate of university graduates in this study may be due to the fact that the place where the study was conducted was a public hospital, the difference in medical diagnoses of the sample group and the older patients.

When the patients were classified according to the visual acuity of the good eye, it was determined that 45.7% had mild visual loss (Table 1). In a study, when the patients were examined according to their visual acuity, it was found that none of the patients had complete blindness and visual impairment ($0.4 \leq$) was found in 14.7% of the eyes (Savar 2009).

Vision is a multidimensional function. Sight has a huge impact on daily life. Among these, dressing, transportation, eating, writing and communication are the most obvious. There is almost no action that does not involve seeing. Sight is intertwined with many subjects from transportation to leisure activities, cooking and eating, meeting daily needs. Vision loss, on the other hand, causes insufficiency in many activities that affect daily life. Therefore, the best possible quality of life can be achieved with the best vision (Brown 1999).

The mean GG subscale score of the patients participating in the study had the lowest score as 38.77 ± 15.43 . This is followed by the GS and GBRG subscales, respectively. The mean TS taken from the scale was found to be 56.72 ± 21.59 (Table 2.) Considering that the highest score that can be obtained from the total of the scale and each of the subscales is 100, it is seen that the vision-related quality of life of the patients participating in the study decreased significantly. Knudtson et al. (2005) in the study in which they examined the relationship between age-related eye diseases, quality of life and functional activity; It has been found that the decrease in visual functions also causes a decrease in the quality of life and decreases the functional activity in life.

In a study in which the visual and general health-related quality of life of 251 patients with Behçet's uveitis in Turkey were evaluated using NEI-VFQ-25 and SF-36 questionnaires, the TS obtained from the NEI-I VFQ was found to be 75.75 ± 18.73 (Savar 2009).

It was determined that the subscales with the lowest mean score were GH, VRMH and GV, and it was concluded that the quality of life of the patients was negatively affected. In addition, it has been observed that the general quality of life due to Behçet's disease is lower than the quality of life due to vision. (Savar 2009).

It was determined that the patients got the highest score (76.64 ± 30.47) from the CV (color vision) subscale (Tablo 2). Knudtson et al. (2005) and Savar (2009) in their studies, it was determined that the highest score belonged to the CV subscale. The similarity in these results shows that although people have vision loss, their color vision characteristics are not affected to the same degree. At the same time, it can be interpreted that people may not look for details in intermediate colors after choosing primary colors, even if they have various degrees of vision loss.

Another study showing a decrease in vision-related quality of life was the study conducted on 51 patients with central retinal vein occlusion. In the study, it was determined that the patients' quality of life related to vision decreased (Deramo et al 2003). It was observed that the lowest score was in AD, GH, GV, and the highest score was in EP and CV subscales. The fact that the mean score of the driving subscale that we obtained was higher than this study suggests that it is due to the lower degree of vision loss in individuals who drive.

Clemons et al. (2003) determined that VRSF, VRRD, VRAO scores were significantly lower in patients with advanced age-related macular degeneration in their studies to determine the internal consistency and reliability of the NEI-VFQ 25 questionnaire comparatively in patients with age-related macular degeneration and cataract. VRRD subscale is in the first place in the lowest score ranking, which is similar to our finding.

In a study of 35 patients with senile cataract, examining the quality of life related to vision, the preoperative NEI-VFQ 25 scale score average was found to be 79.03 ± 9.78 (Bayraktar 2008). Those with the lowest subscale scores are GV, AD, GH, respectively. Similarly, in the study conducted by Çelik (2008) in which he evaluated the relationship between visual function and quality of life in glaucoma patients, the mean overall score was determined as 77.6 ± 12.4 . As can be seen, the results obtained from the studies are similar in terms of negatively affecting the quality of life related to vision in patients with vision loss.

However, this suggests that the mean TS score in this study is due to the fact that it included patients with a higher rate of vision loss.

When subscale scores and TS were compared according to gender, men's scores were found to be significantly higher than women's, excluding GV and CV subscales (Table 3) ($p < 0.05$).

No significant difference was found between NEI-VFQ-25 subscale scores in the comparison made according to gender variable in patients with Behçet's uveitis. However, the best visual acuity and near visual acuity corrected according to the Role restriction-Emotional subscale of the SF-36 and the visual equivalence scale in which the patients evaluated themselves were found to be lower in women than in men (Savar 2009). Recent studies have also shown that the quality of life of patients related to visual function is closely related to gender as well as visual acuity.

In the study conducted by Bayraktar (2008) on cataract patients, the preoperative NEI-VFQ 25 scale mean score for men was 81.8 ± 7.6 , while the mean score for women was 77.1 ± 10.9 . Lundqvist et al. (2008) investigated the effects of gender on visual function, subjectively and objectively, during the 5 years following cataract operation. The results of both studies are similar to our findings. The lower scores of women may be related to the lower educational level of female patients, their less involvement in social life and a home-bound life.

It was found that all subscale scores of those with normal vision in their well-sighted eyes, except for the VP (vision pain) and AD (driving) subscales, were significantly higher than the scores of other patients with various degrees of vision loss in TS (Table 4). In a study conducted on 4077 patients over a 5-year period, the relationship between visual acuity and NEI-VFQ-25 scores in 4 groups of patients with AMD, cataract, low visual acuity and cataract surgery; VRLQ was found to be significantly lower in patients with visual loss in both eyes compared to patients with normal vision in both eyes or vision loss in one eye (Clemons et al 2003). This is in agreement with our study. Since the visual field is one of the methods that measure visual functions, it is estimated that the loss in this field will decrease the quality of life.

In the literature, it is stated that the visual acuity of the well-sighted eye should be taken as a basis for the definition of low vision (Aydın and Bayraktar 2007). In the study performed by Deramo et al. (2003) on 51 uveitis patients, all subscale scores of NEI-VFQ-25 were found to be significantly lower than the normal reference group. A strong correlation was found between NEI-VFQ-25 subscale scores and visual acuity of the well-sighted eye, systemic drug use, and general health perceptions of the patients.

No correlation was found between visual acuity in the affected eye and subscales. In a study in which another vision-related quality of life (VRQOL) scale called VCM-1 and SF-36 were used together in patients with uveitis, it was found that as visual acuity decreased, visual responses in the VCM-1 questionnaire deteriorated and this was associated with SF-36 Mental Health and Physical Function scores detected (Mangione 2001).

In a study comparing NEI-VFQ-25 subscale and Visual Equivalence Scale score values compared to eyes with better visual acuity, NEI-VFQ-25 GV, NA, DA, VRSF, VRCV, CV, PV, TS subscale scores and Visual Equivalence Scale significant difference was observed in the values.

As visual acuity increased, NEI-VFQ-25 subscale and Visual Equivalence Scale scores increased significantly. (Savar 2009). Bayraktar'ın (2008) In the study, the patients were examined in 3 groups according to the best corrected visual acuity according to the preoperative Snellen chart; Group 1 consists of those with a vision of 0.2 and below, Group 2 with a vision of 0.3-0.5, and Group 3 with a vision of 0.6 and above. The preoperative and postoperative mean scores of these groups were calculated, and it was observed that there was a significant increase in the postoperative mean score in all groups. It was concluded that the increased visual acuity level after the operation positively affects the quality of life related to vision. In the studies in the literature, it is seen that evaluating the visual acuity of the well-sighted eye is a significant criterion in evaluating the quality of life of the person.

5 | CONCLUSION AND SUGGESTION

In individuals with vision loss; It was determined that vision-related quality of life decreased. It was determined that the female gender factor and the increase in the degree of vision loss negatively affected the vision-related quality of life. For this reason, taking measures for the early diagnosis and treatment of eye patients in order to increase the level of quality of life; it is recommended to prepare screening programs and other necessary regulations and training programs.

6 | REFERENCES

- 1- Okka B. (2007). History of eye prostheses. Selcuk University, Journal of the Faculty of Dentistry, (16):60-67.
- 2- Ceyhan D. (2006). Binocularity and the Effect of Binocularity on Reading Function in Patients with Low Vision. Ankara University, Institute of Health Sciences, Master Thesis, Ankara, Turkey.

- 3- Zhang C, Hua T, Li G, Tang C, Sun Q, Zhou P. (2008). Visual function declines during normal aging. *Current Science*, 95(11):1544-1550.
- 4- Savcı C. (2007). Evaluation of Healthy Associated Quality of Life in Parkinson's Patients. Istanbul University, Institute of Health Sciences, Master Thesis, Istanbul, Turkey.
- 5- Savar F. (2009). Evaluation of Quality of Life Related to Vision and General Health with NEI-VFQ-25 and SF-36 Questionnaires in Behçet's Patients with Uveitis. Marmara University, Institute of Health Sciences, Specialization Thesis, İstanbul, Turkey.
- 6- Bayraktar Ş.C. (2008). Pre and Post-Operation Visual Function Evaluation in Patients with Senile Cataract. Istanbul University, Institute of Health Sciences, Specialization Thesis, Istanbul, Turkey.
- 7- Aydın P, Bayraktar MZ. (2007). Ophthalmology Handbook for General Practitioners. Nobel Medical Book, Ankara, Turkey. pp.51-121.
- 8- Demirhan H. (2009). Investigation of Factors Associated with Mobility in Elderly People with Low Vision. Hacettepe University, Institute of Health Sciences, Master Thesis, Ankara, Turkey.
- 9- Güven N. (2010). Evaluation of Fatigue and Quality of Life in Patients with Diabetes Mellitus. Hacettepe University, Institute of Health Sciences, Master Thesis, Istanbul, Turkey.
- 10- Toprak AB, Eser E, Güler C, Baser FE, Mayali H. (2005). Cross-validation of the Turkish version of the 25-Item National Eye Institute visual functioning questionnaire (NEI-VFQ 25). *Ophthalmic Epidemiology*, 12(4):259-269.
- 11- Çelik O. (2008). Evaluation of Health-Related Quality of Life in Glaucoma Patients. Dokuz Eylül University, Institute of Health Sciences, Specialization Thesis, İzmir, Turkey.
- 12- Brown G. C. (1999). Vision and quality of life. *Trans Am Ophthalmol Soc*, (97):473-511.
- 13- Knudtson Md, Klein BE, Klein R, Cruickshanks KJ, Lee KE. (2005). Age related disease, quality of life, and functional activity. *Arch Ophthalmol*, 123(6):807-814.
- 14- Deramo VA, Cox TA, Syed AB, Lee PP, Fekrat S. (2003). Vision-related quality of life in people with central retinal vein occlusion using the 25-item National Eye Institute Visual Function Questionnaire, *Arch Ophthalmol*, 121(9):1297-1302.

- 15- Clemons ET, Chew EY, Bressler SB, McBee W. (2003). National Eye Institute Visual Function Questionnaire in the age-related eye disease study (AREDS). *Arch Ophthalmol*, 121(2): 211-217.
- 16- Lundqvist B, Mönestam E. (2008). Gender-related differences in cataract surgery outcome: A 5-year follow-up. *Acta Ophthalmol*, 86(5):543-548.
- 17- Mangione CM, Lee PP, Gutierrez PR, Spritzer K, Berry S, Hays RD. (2001). Development of the 25-Item National Eye Institute visual function questionnaire. *Arch Ophthalmol*, 119(7):1050-1058.
- 18- Demirel, G. (2011), Evaluation of Vision-Related Quality of Life in Individuals With Vision Loss, Marmara Üniversitesi Marmara University, Institute of Health Sciences, Master Thesis, Istanbul, Turkey.