Research Article

151

Doi: 10.4274/vhd.galenos.2020.2020.0011
Viral Hepatitis Journal 2020;26(3):151-157

Evaluation of Health-Related Life Quality of Patients with Chronic Hepatitis Admitted to a Medical Faculty Hospital

Tıp Fakültesi Hastanesine Başvuran Kronik Hepatitli Hastaların Sağlıkla İlişkili Yaşam Kalitesinin Değerlendirilmesi

Belgin Oral[1], İskender Gün[2], Fevziye Çetinkaya[2]

[1]*University of Health Sciences Turkey, Atatürk Chest Diseases and Chest Surgery Training and Research Hospital, Ankara, Turkey*
[2]*Erciyes University Faculty of Medicine Department of Public Health, Kayseri, Turkey*

ABSTRACT

Objectives: The aim of this study was to determine the life quality and related factors of patients with chronic hepatitis B and C who admitted to the Infectious Diseases Clinic of Erciyes University Medical Faculty Hospital.
Materials and Methods: In this cross-sectional study, a total of 234 patients with chronic hepatitis B and C between December 2016 and June 2017 were included. The questionnaire consisted of 16 sociodemographic questions and SF-36 life quality form.
Results: The average age of 234 participants was 53.4±13.2 (minimum: 19, maximum: 84) years. 19.7% of the participants were hepatitis B carriers, 44.0% were chronic hepatitis B and 36.3% were chronic hepatitis C patients. Life quality scores were found to be significantly lower in patients with hepatitis C, in women, the elderly, those with low educational and economic status, and those who did not work, who had an additional disease and who did not perform regular physical activity.
Conclusion: Social arrangements to improve life quality especially for women, the elderly, individuals with lower education and economic status, some economic improvements in the treatment process and encouraging patients to physical activity may be beneficial.
Keywords: Patients with hepatitis, life quality, SF-36

ÖZ

Amaç: Bu çalışmanın amacı, Erciyes Üniversitesi Tıp Fakültesi Hastanesi Enfeksiyon Hastalıkları Kliniğine başvuran kronik hepatit B ve C'li hastaların yaşam kalitesini ve ilişkili bazı faktörleri belirlemektir.
Gereç ve Yöntemler: Kesitsel nitelikteki bu çalışmaya Aralık 2016 ile Haziran 2017 ayları arasındaki kronik hepatit B ve C'li toplam 234 hasta dahil edilmiştir. Anket 16 sorudan oluşan sosyo-demografik anket formundan ve SF-36 yaşam kalitesi ölçeğinden oluşmaktadır.
Bulgular: Toplamda 234 katılımcının ortalama yaşı 53,4±13,2 (minimum: 19, maximum: 84) yıldır. Katılımcıların %19,7'si hepatit B taşıyıcısı, %44,0'ı kronik hepatit B ve %36,3'ü ise kronik hepatit C hastasıydı. Çalışmamızda yaşam kalitesi puanları kadınlarda, yaşlılarda, eğitim durumu ve ekonomik durumu düşük olanlarda, çalışmayan, ek bir hastalığı olan ve düzenli fiziksel aktivite yapmayan gruplarda, hepatit türüne göre ise hepatit C'li hastalarda anlamlı olarak düşük bulunmuştur.
Sonuç: Özellikle kadınlar, yaşlılar, eğitim düzeyi ve ekonomik durumu düşük olan bireyler için yaşam kalitesini artırmaya yönelik sosyal düzenlemeler, tedavi sürecinde ekonomik bazı iyileştirmelerin yapılması ve hastaların fiziksel aktiviteye teşvik edilmesi faydalı olabilir.
Anahtar Kelimeler: Hepatitli hastalar, yaşam kalitesi, SF-36

Oral B, Gün İ, Çetinkaya F. Evaluation of Health-Related Life Quality of Patients with Chronic Hepatitis Admitted to a Medical Faculty Hospital. Viral Hepat J. 2020;26:151-157.

Address for Correspondence: *Belgin Oral MD, University of Health Sciences Turkey, Atatürk Chest Diseases and Chest Surgery Training and Research Hospital, Ankara, Turkey*
Phone: +90 505 712 40 04 E-mail: belgin.zeybek@hotmail.com ORCID ID: orcid.org/0000-0002-2246-4733 **Received:** *23.03.2020* **Accepted:** *18.09.2020*

Introduction

Hepatitis is an infectious disease which has an important place in liver diseases. It is an important public health issue related to individual health that has social dimensions. It can be passed as an acute infection, some of these infections become chronic and sometimes these infections continue until the end of life. Hepatitis B and C, which tend to be chronic, are the most common types of hepatitis. Furthermore, inactive hepatitis B carriage may become chronic and cause serious liver diseases in the following years (1). It is known that viral hepatitis can become chronic and lead to the development of liver failure, cirrhosis, and liver cancer and cause serious morbidity and mortality (2).

In the Global Hepatitis Report published in 2017, the World Health Organization stated that 257 million people lived with chronic hepatitis B and 71 million people lived with chronic hepatitis C and 1.34 million deaths were caused by hepatitis in 2015 (3). Chronic hepatitis B and C are caused by 96% of these deaths. The burden of hepatitis infection is not evenly distributed throughout the world but is more concentrated in West Africa and East-South Asia. Almost half of all deaths due to hepatitis occur in these regions (4). In Turkey, the prevalence of hepatitis B is reported as 4% and hepatitis C as 1% and it is reported that one out of every three adults encountered hepatitis B (2,5).

The survival of this two hepatitis which became chronic requires regular follow-up and treatment, affects the patients as well as the national economy and brings a serious burden of disease. The chronicity of the disease affects the quality of life of hepatitis patients as in all other chronic diseases. Life quality is a concept that evaluates the individual's well-being in many aspects. Although life quality coincides with terms such as "well-being", "social determinants of health" and "way of life", they are not synonymous (6). Similar to the definition of health as physical, mental and social well-being, life quality is also related to the level of perception of the aims, expectations, standards, and concerns of individuals in the socio-cultural environment in which they live. It can be defined as the individual's own level of perception about how much social wishes and needs can be met (7,8).

While life quality evaluates physical, mental and social functioning, it also refers to the reflections of individuals' health perceptions in daily life. It is possible that chronic hepatitis patients may suffer from impaired life quality, reduced functionality in daily activities and their physical, mental and social life may be affected negatively. Determining the life quality levels and perceptions of patients at regular intervals in every stage of the disease is a very important issue in coping with stress in the management of the disease. In the literature, there is a limited number of studies evaluating the life quality of hepatitis patients. This situation reveals that this issue should be examined.

Our aim in this study is to examine the life quality of chronic hepatitis patients and some factors that may affect this and to contribute to the improvement of conditions that may adversely affect the life quality of hepatitis patients with similar studies.

Materials and Methods

This cross-sectional study was conducted in Erciyes University Medical Faculty Hospital between December 2016 and June 2017. All chronic Hepatitis B and Hepatitis C patients who were admitted to Infectious Diseases and Clinical Microbiology clinic of Erciyes University Medical Faculty Hospital were interviewed. Information was given to all patients about the study. Identity information was not wanted from the participants and a face-to-face interview was conducted with those who decided to participate. The interview period lasted approximately 15 minutes for each participant. The questionnaire interviews were conducted by a single researcher. A total of 312 patients with hepatitis B carriers, chronic hepatitis B and C outpatients who were diagnosed as chronic hepatitis B and C were interviewed and 234 patients who agreed to participate in the study were included in the study.

The survey form composed of SF-36 Life Quality Scale and 16 questions that questioning socio-demographic characteristics of the participants such as age, gender, marital status, educational status, regular medicine use status, social security and whether they accompanied by any other chronic disease (9). Life quality scale was developed by Ware and Sherbourne and its reliability and validity in Turkish were performed by Koçyiğit et al. (10). In addition, the validity and reliability of the scale were tested by Pınar (11) in cancer patients and it was shown to be used for the patients who has chronic diseases. The scale consists of 36 items and has 8 sub-dimensions. These sub-dimensions were physical functionality (10 items), physical role difficulties (4 items), emotional role difficulties (3 items), energy-vitality (4 items), mental health (5 items), social functionality (2 items), pain (2 items) and general health perception (5 items). The fourth and fifth questions of the scale are yes/no type and the other questions are the Likert type (9,10,12). While physical functionality is related to the ability to perform all physical activities, such as bathing and dressing, physical role difficulty is related to problems encountered at work or other daily activities as a result of deterioration of physical health. Emotional role difficulty refers to problems experienced at work or other daily activities due to emotional problems. Social functionality; excessive and frequent interruptions in social activities due to physical and emotional problems, energy-vitality; continuous tired and tired or lively and energetic feelings, mental health, constant irritability or depression or constant calm, relaxed and happy feeling, pain is severe and restrictive pain, general health perception is related to believing that their health is good, bad or perfect. The scores of the subscales ranged from 0 to 100, and higher scores indicate a good life quality, while lower scores indicate poor life quality. Only the second question of the scale evaluates the health status in the last one year, while the other questions are aimed to evaluate the last four weeks (9,10,12).

This study was approved by the Erciyes University Clinical Research Ethics Committee. Permission was obtained from the Erciyes University Faculty of Medicine Hospital Head Department and the department headship of the related department. All participants were informed about the study before the study and their verbal consent was obtained.

Statistical Analysis

At the end of the study, the data obtained through the questionnaire form was entered in to SPSS version 21.0. The controls and analysis of the data were performed in the same program. Frequency and percentage, mean value, standard deviation, highest and lowest values were used for descriptive

statistics. Pearson chi-square test was used for statistical analysis of categorical data, and Shapiro-Wilk and Kolmogorov-Smirnov tests were used for statistical analysis of quantitative data to determine the compatibility of normal distribution. Mann-Whitney U and Kruskall-Wallis (post hoc Dunn's test) were used because the dependent variables did not fit the normal distribution. Spearman Correlation Coefficient was used to show the relationship between the variables. Statistical significance was considered as $p<0.05$.

Results

The average age of 234 participants was 53.4±13.2 (min: 19, max: 84) years. The rate of participants under the age of 40 is 15.0%, those between the ages of 41-59 are 47.4% and those over the age of 60 are 37.6%. While the average age of women was 54.4 years, the average age of men was 52.0 years. 65.4% of the participants were women, 88.9% were married and 74.4% lived in the city centre and 17.5% lived in the district centre. When education status was evaluated, 73.1% of participants were secondary and below, 12.4% of those were high school and 14.5% of those were university, graduates. Only 2 of the participants do not have social security. According to their statements, 81.6% of hepatitis patients had moderate economic status and 75.6% did not have a job. Only 3.8% of the participants lived alone.

While the hepatitis B carrier was 19.7%, 44.0% of the participants were chronic hepatitis B and 36.3% of the patients were chronic hepatitis C. 81.2% of the patients stated that they have been living with hepatitis for more than 5 years. About half of them had an additional chronic disease and took regular medication. Until the study period 14.5% of the participants stated that they received any psychological support and 23.5% of those stated that they exercised regularly. Among the participants, smoking rate is 12.4% and alcohol is 7.3%, according to their own statements.

When the age distribution of the groups was examined according to the status of hepatitis, hepatitis carriers and patients with chronic hepatitis B were mostly in the 41-59 age range, and majority of hepatitis C patients were 60 years or above. There was a significant difference between the groups (X^2: 54,779, ($p<0.001$). In addition, 52.2% of hepatitis B carriers were male and 80% of hepatitis C patients were female. There was a significant difference between the groups in terms of gender (X^2: 15,098, $p=0.001$). When the existing hepatitis types in the patients were evaluated according to their education status, 86.5% of them had secondary and lower education graduates and they were chronic B and C patients. 38.2% of university graduates hepatitis carriers (X^2: 23,183, $p<0.001$). 52.2% of hepatitis carriers were working, and the majority of chronic hepatitis B and C patients (73.8% and 92.9%, respectively) were not working (X^2: 33.315, $p<0.001$). There was no statistically significant difference was found between the types of hepatitis and the duration of their diseases, whether there was an additional disease, psychological support, smoking and their economic status ($p>0.05$). When the mean scores obtained from the SF-36 life quality scale were compared according to the hepatitis type in the patients, a significant difference was found between the groups in the physical functionality and pain subscale ($p<0.05$). This difference was lower in patients with chronic hepatitis C (Table 1). The scale scores of all hepatitis patients were found to be significantly lower than the standard scores of the Turkish population excluding pain sub-dimension (Table 1).

Table 1. Type of hepatitis and life quality scale scores in patients

Life quality scale subdimensions	Hepatitis type				
	Carrier	Chronic HB	Chronic HC	Average of all patients	Turkish population average
Physical functionality	81.7±19.5[a]	78.3±21.1[a]	64.4±24.0[b]	73.91±23.0	86.6±25.2
	***p<0.001**			****p<0.001**	
Physical role difficulty	64.7±47.0	67.0±46.3	53.9±48.6	61.75±47.5	89.5±29.6
	*p=0.135			****p<0.001**	
Emotional role difficulty	67.4±46.3	67.3±46.0	52.5±49.4	62.0±47.7	94.7±20.9
	*p=0.088			****p<0.001**	
Energy vitality	61.2±23.0	57.8±13.1	52.2±26.1	56.5±24.4	67.0±13.8
	*p=0.121			****p<0.001**	
Mental health	64.2±23.0	57.8±23.1	52.2±26.2	65.3±20.2	73.5±11.6
	*p=0.969			****p<0.001**	
Social functionality	87.0±20.6	90.8±18.4	85.3±21.7	88.0±20.2	94.8±14.2
	*p=0.169			****p<0.001**	
Pain	85.0±17.4[a]	89.2±16.2[b]	80.7±20.7[a]	85.3±18.5	86.1±20.6
	***p=0.009**			**p=0.508	
General health	64.7±24.6	58.6±22.6	60.1±23.2	60.3±23.2	73.9±17.5
	*p=0.231			****p<0.001**	

*Kruskal-Wallis (post hoc Dunn's test) (Kruskal-Wallis was performed because the data did not fit the normal distribution, but average values were given to compare with the Turkish population average), a, b, The difference between groups that do not carry the same letter in each row is significant ($p<0.05$). **OneSample t test
HB: Hepatitis B, HC: Hepatitis C

When the scale scores were evaluated in terms of gender, although not significant in social functioning the scale scores were found to be significantly higher in men in all other sub-dimensions ($p < 0.05$). Scale scores of patients according to age groups; physical functionality, physical role difficulties, emotional role difficulties, and energy-vitality subscales were lower in the 61years old and above groups. A significant difference was found between the groups with these values being higher in the group with age 40 and below ($p<0.05$). There was a negative and poor correlation with the value 0.05 between all other dimension scores except mental health and general health perception with age. In other words, as age increases, scale scores decrease (Table 2).

There was a significant difference between the groups in all sub-dimensions except social functioning. This value was lower in the group having secondary education and lower education level ($p<0.05$) (Table 2). A positive weak correlation was found between education status and all other subscale scores except the social functioning subscale. In other words, the higher the level of education, the higher the scale scores. According to their economic status, physical functionality, energy-vitality, pain and mental health sub-dimensions of the scale scores were found to be significant and high in the groups who stated their economic status high compared to the other groups ($p<0.05$) (Table 2). Scale scores were found to be significantly lower in patients with an additional disease, in regular medication use, in those who did not exercise regularly, and in those who did not work ($p<0.05$). The subscale scores of energy-vitality, mental health, social functioning, pain, and general health perception were found significantly lower in those receiving psychological support ($p<0.05$) (Table 2).

Discussion

Hepatitis is an important infectious agent in liver diseases. The chronicity of some of hepatitis, their lifelong survival, the need for regular follow-up and treatment affect the daily life of the patients. It brings some limitations, both physically and spiritually. These limitations and adversities directly affect life quality and cause life quality to be lower than expected. The decrease in life quality also affects the disease process. The life quality decreases in patients who are in a vicious circle and problems may arise in the management of the disease. For this purpose, the determination of physical, mental and social changes of patients becomes an important issue (13,14,15,16).

In our study, the life quality scores of the participants were found to be well below the society average. When the scores evaluated according to hepatitis type, physical functionality and pain subscale scores were significantly lower in hepatitis C patients (Table 1). As in our study, life quality scores were significantly lower in patients with hepatitis C in other studies (13,14). This may be related to the fact that hepatitis C patients are more females and that they are in a more advanced age group. In a study performed by Taşbakan et al. (15) in another center for hepatitis carriers and chronic hepatitis B patients, overall scale scores were found to be higher than our study scores. Whereas, the scale scores were found to be lower than our study scores in a study performed by Yiğit et al (16). Such differences between studies may be due to differences among participants' age, gender, and educational background. As a matter of fact, the work of Taşbakan et al. (15) was conducted on a younger and higher education group. This study may have caused the mean age of our study group to be higher than this study. In support of this finding, in our study, physical functionality, physical role difficulty, emotional role difficulty and energy-vitality subscale scores of the patients in the age group of 61 years and above were significantly lower. Scale scores decreased with age. In a study conducted by Bilir et al. (17) in men aged 15 years and over in Van, they demonstrated a decreasing life quality with age. In the general population of Malaysia, Azman et al. (18) and Jayasinghe et al. (19) in adults with chronic disease in Australia showed the decreased life quality scores with increasing age as in our study (17). Many factors such as increase in health problems with age, the presence of multiple chronic diseases and being away from working life may demonstrate themselves with a decrease in life quality.

In our study, all sub-dimension scores of males except social functioning were found to be higher than females. In the studies conducted in patients with hepatitis, in general, scale scores were found to be higher in males as in our study (20-22). At the same time, in other studies on life quality other than hepatitis also it was found that life quality was significantly lower in women (18,23-27). In addition to the difficulties posed by chronic illness, women's domestic responsibilities, lower level of education may lead to difficulty in accessing health services and taking social support and therefore this negatively affects their life quality.

In our study, the relationship between the participants' educational status and scale scores was positive and the scale scores were found to be high in the group with high educational status. Other studies in the literature were shown a positive relationship between education level and quality of life (15,18,22,28-30). An increase in the level of education brings also an increase in health awareness, ease of use of health services and an increase in health perception together with an increase in life quality. In addition, job opportunities provided to individuals by education, which is one of the influential factors on life quality, positively affect life quality by enabling both the economic level to increase and individuals to socialize with work life. In our study, physical functionality, energy-vitality, and mental health sub-dimensions and life quality in the working group were found to be significantly higher in the group that stated their economic status as high. When the literature is examined, there are studies that do not have a significant relationship between economic status and quality of life, for example, Abdo's study in Saudi Arabia. However, there are also studies showing a significant relationship. For example, Jayasinghe et al. (19) found a higher life quality in employees according to the unemployed and retired in Australia. Similarly, Karacaer et al. (22) also found higher life quality in participants with regular income. Preto et al. (29) found the life quality of the unemployed to be lower in their study (19,20,22). In order to meet the physical needs of human beings, it is likely that they need an income. Based on the data of all these studies and our research, the high economic situation is related to better life quality. In addition, working in any job provides a regular income. It helps the person to be away from financial problems and to meet the physical needs which are the first step in realizing himself/herself. In this way, it provides the individual with status and gives him/her feelings of respect and belonging. It helps the individual to socialize and achieve a better life quality.

Table 2. Life quality scale scores of patients according to some variables

Variables		n PF Mean ± SS	Life quality scale subdimensions							
			PRD	ERD	E-V	MF	SF	P	GH	
			Mean ± SS	Mean ± SS	Mean ± SS	Mean ± SS	Mean ± SS	Mean ± SS	Mean ± SS	
Gender	Female	153	68.3±22.6	52.9±48.9	53.2±49.5	50.7±24.1	62.6±20.5	87.1±21.2	81.9±19.9	55.4±23.6
	Male	81	84.4±20.0	78.4±39.9	78.6±39.2	67.4±21.1	70.5±18.6	89.8±18.0	91.6±13.5	69.7±19.3
	p*		<0.001	<0.001	<0.001	<0.001	**0.004**	0.456	<0.001	**<0.001**
Age	≤40	35	86.3±17.6[a]	80.0±39.2[a]	80.0±38.9[a]	66.4±20.8[a]	70.3±18.0	93.9±15.3	91.4±13.8	62.7±24.7
	41-59	111	77.4±21.2[a]	60.6±47.5[a.b]	59.8±48.2[a.b]	55.1±24.4[b]	64.8±21.3	86.6±22.2	84.7±18.9	60.9±22.9
	60≤	88	64.5±23.7[b]	56.0±49.1[b]	57.6±48.9[b]	54.1±25.1[b]	64.0±19.4	87.5±19.0	83.6±19.3	58.8±23.2
	p**		<0.001	0.043	0.049	**0.034**	0.324	0.120	0.117	0.605
Education status	Secondary school and below	171	68.8±22.8[a]	56.1±48.7[a]	56.7±49.0[a]	52.5±23.8[a]	63.2±19.9[a]	87.3±20.9	82.6±19.5[a]	56.6±23.2[a]
	High school	29	83.4±18.6[b]	64.7±48.0[a.b]	65.5±48.4[a.b]	69.5±21.4[b]	72.7±17.6[b]	92.2±14.3	94.1±10.0[b]	70.0±17.8[b]
	Üniversity	34	91.5±14.9[b]	87.5±29.7[b]	85.3±30.9[b]	65.3±24.3[b]	69.8±21.7[a.b]	88.2±20.4	91.2±15.0[b]	71.0±22.2[b]
	p**		<0.001	0.002	0.013	<0.001	**0.018**	0.695	0.001	**<0.001**
Economic status	High	30	86.3±18.3[a]	79.2±40.5	77.8±40.4	71.0±20.0[a]	74.8±15.6[a]	91.7±17.5	91.5±12.2[a]	67.8±18.5
	Moderate	191	72.7±22.3[b]	59.0±47.9	59.5±48.3	55.5±23.6[b]	64.6±20.1[b]	88.0±20.0	85.1±18.5[a.b]	59.3±23.8
	Low	13	63.1±32.0[b]	61.5±50.6	61.5±50.6	36.5±24.9[c]	53.8±23.6[b]	79.8±26.8	74.4±25.5[b]	57.7±23.1
	p**		0.003	0.120	0.183	<0.001	**0.006**	0.265	0.019	0.197
Working status	Working	177	89.1±18.6	87.3±31.4	84.2±34.0	67.7±21.0	71.8±20.1	91.6±17.6	92.9±13.2	69.4±21.1
	Not working	57	69.0±22.2	53.5±48.9	54.8±49.3	52.8±24.4	63.2±19.8	86.9±20.8	82.7±19.3	57.4±23.2
	p*		<0.001	<0.001	<0.001	<0.001	**0.003**	0.090	<0.001	**<0.001**
Additional disease	Yes	130	64.9±23.4	52.1±48.9	51.3±49.5	48.5±23.9	59.5±20.6	85.0±22.5	80.1±20.7	54.4±24.1
	No	104	85.1±16.9	73.8±42.9	75.3±41.8	66.3±21.3	72.6±17.1	91.8±16.1	91.8±12.6	67.7±19.8
	p*		<0.001	0.001	<0.001	<0.001	<0.001	0.030	<0.001	**<0.001**
Regular medication	Yes	116	63.6±23.2	52.4±49.0	50.9±49.0	48.8±23.9	59.4±19.8	83.5±23.5	80.0±20.6	54.1±24.0
	No	118	84.0±17.8	71.0±44.2	72.9±43.8	63.9±22.7	71.1±18.9	92.5±15.1	90.5±14.4	66.5±20.8
	p*		<0.001	0.002	<0.001	<0.001	<0.001	0.003	<0.001	**<0.001**
Regular exercise	Yes	55	85.2±17.4	75.0±43.3	73.3±42.7	70.7±20.6	73.6±15.0	95.2±12.8	92.2±14.5	69.5±22.7
	No	179	70.4±23.4	57.7±48.1	58.5±48.7	52.1±23.8	62.7±20.9	85.8±21.5	83.2±19.1	57.5±22.7
	p*		<0.001	0.015	0.043	<0.001	0.001	0.003	<0.001	**<0.001**
Psychological support status	Yes	34	66.3±28.6	50.7±47.5	49.0±48.7	46.2±25.3	53.8±23.0	76.1±27.9	72.4±24.6	50.0±20.4
	No	200	75.2±21.7	63.6±47.3	64.1±47.3	58.2±23.9	67.3±19.0	90.1±17.8	87.5±16.3	62.1±23.2
	p*		0.087	0.119	0.074	0.010	0.001	0.003	<0.001	**0.003**

*Mann-Whitney U, **Kruskall-Wallis (post hoc Dunn's test), a, b, c: The difference between groups that do not carry the same letter in each column is significant (p<0.05) PF: Physical functionality, PRD: Physical role difficulty, ERD: Emotional role difficulty, EV: Energy vitality, MF: Mental functionality, SF: Social functionality, P: Pain, GH: General health

In our study, all scale scores were found to be significantly lower in patients with the additional disease and in regular medication use ($p<0.05$). The majority of participants have been living with hepatitis for more than five years. In addition to the burden of disease caused by hepatitis, the presence of another disease may cause serious disruptions in the management of the disease. Karacaer et al. (22) found that all scale scores were significantly lower in patients with hepatitis with an additional chronic disease as in our study. In addition, in another study conducted in Australia with chronic disease, it was stated that the life quality scores of those with two or more chronic diseases significantly lower than those without additional diseases. Similarly, those with chronic pain in France stated that significantly lower life quality scores than those without pain (19,26). In our study, scale scores were found to be significantly lower in those who did not perform physical activity regularly. Regular physical activity is an indication of the importance that individuals attach to healthy living. It can be said that individuals who do physical activity pay more attention to their health. It is an important fact that physical activity contributes positively to the management of the disease and coping with stress.

Conclusion

As a result, in our study, life quality scores were found to be significantly lower in women, the elderly, those with low educational and economic status, in those who did not work, who had an additional disease and who did not perform regular physical activity, and in patients with hepatitis C compared to the type of hepatitis. The presence of diseases with increasing age, limitation of movement and distancing from work-life adversely affect life quality. Supporting patients in the management of multiple diseases and regular physical activity will benefit the treatment period during the control of the disease. Patients should be encouraged to engage in physical activity. If they do not have any income-generating work for them to feel more active in, social activities, especially for women and the elderly, will be beneficial to create a safe environment where hepatitis patients can share their coexistence experiences. At the same time, psychological counseling should be given to patients with mental problems. Studies related to the subject in different disease periods of hepatitis patients and supporting these studies by the management will help to improve the life quality of the patients with hepatitis. It may also be useful to make some economic improvements in the treatment process.

Ethics

Ethics Committee Approval: This study was approved by the Erciyes University Clinical Research Ethics Committee.

Informed Consent: All participants were informed about the study before the study and their verbal consent was obtained.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: F.Ç., Design: F.Ç., Data Collection or Processing: B.O., Analysis or Interpretation: B.O., İ.G., F.Ç., Literature Search: B.O., İ.G., F.Ç., Writing: B.O., İ.G., F.Ç.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

References

1. Akhan S, Aydınoğlu A, Çağatay A, Gönen İ, Günal Ö, Kaynar T, Kuruüzüm Z, Sayan M, Tunca B, Tülek N, Üçkardeş H, Yavuz A, Yıldız O, Yılmaz N, Yüksel E. Management of Chronic Hepatitis B Virus Infection: A Consensus Report of the Study Group for Viral Hepatitis of the Turkish Society of Clinical Microbiology and Infectious Diseases. Klimik Dergisi. 2014;27(Suppl. 1):2-18.
2. Turkey Viral Hepatitis Prevention and Control Program, 2018-2023, ISBN: 978-975-590-688-1 Ministry of Health, publication no: 1102 Ankara 2018, p:1-14
3. WHO, Global Hepatitis Report, 2017, p:1 date of access: 08.08.2019, access address: https://apps.who.int/iris/bitstream/handle/10665/255016/9789241565455-eng.pdf?sequence=1
4. Edıtors Holmes K. K, Bertozzi S, Bloom B. R, Jha P. Major Infectious Diseases, Dısease Control Priorities Third Edition, 2017 International Bank for Reconstruction and Development/The World Bank. 2017:400-406.
5. Tozun N, Ozdoğan O, Cakaoglu Y, Idilman R, Karasu Z, Akarca U, Kaymakoglu S, Ergonul O. Seroprevalence of hepatitis B and C virüs infections and risk factors in Turkey: a fieldwork TURHEP study. Clin Microbiol Infect. 2015;21:1020-1026.
6. Kerce EW. Quality of Life: Meaning, Measurement, and Models, Navy Personnel Research and Development Center San Diego, California. 92152-6800 TN-92-15 1992;p:2
7. Theofilou P, Quality of Life: Definition and Measurement. Europe's Journal of Psychology. 2013;9:150-162.
8. Vahedi S. World Health Organization Quality-of-Life Scale (WHOQOL-BREF): Analyses of Their Item Response Theory Properties Based on the Graded Responses Model. Iran J Psychiatry. 2010;5:140-153.
9. Ware JE, Sherbourne CD. The MOS 36-İtem Short-Form Healty Survey (SF-36). I. Conceptual Framework and Item Selection. Med Care. 1992;30:473-483.
10. Koçyiğit H, Aydemir Ö, Fişek G, Ölmez N, Memiş A. Reliability and validity of the Turkish version of short form-36 (SF-36). İlaç ve Tedavi Dergisi. 1999;12:102-106.
11. Pınar R. Reliability and construct validity of the SF-36 in Turkish cancer patients. Qual Life Res. 2005;14:259-264.
12. Brazier JE, Harper R, Jones NM, O'Cathain A, Thomas KJ, Usherwood T, Westlake L. Validating the SF-36 Health Survey Questionnaire: New Outcome Measure for Primary Care. BMJ. 1992;305:160-164.
13. Bondini S, Kallman J, Dan A, Younoszai Z, Ramsey L, Nader F, Younossi ZM. Health-related quality of life in patients with chronic hepatitis B. Liver Int. 2007;27:1119-1125.
14. Özkan M, Çorapçıoğlu A, Balcioğlu I, Ertekin E, Khan S, Ozdemir S, Karayün D, Unsalver BO, Kocaman N, Kaymakglu S, Köroglu G. Psychiatrıc Morbidity and Its Effect on the Quality of Life of Patients with Chronic Hepatitis B and Hepatitis C. Int'l. J. Psychiatry Med. 2006;36:283-297.
15. Taşbakan MI, Sertöz ÖÖ, Pullukçu H, Özkören Çalık Ş, Sipahi OR, Yanmazhan T. Comparison of quality of life in hepatitis B virus carriers versus chronic hepatitis B virus carriers versus the normal population. Turk J MedSci. 2010;40;575-583.
16. Yiğit Ö, Ural O, Aktuğ-Demir N, Sümer Ş, Güler Ö, Demir LS. Evaluation of Depression, Anxiety Level and Quality of Life in Patients with Chronic Hepatitis B and Inactive Hepatitis B Virus Carriers. Klimik Dergisi. 2017;30:136-141.
17. Bilir N, Özcebe H, Vaizoğlu S, Aslan D. Assessing the Quality of Life of Males 15 Years and Older in Van Province Via Sf-36. Turkiye Klinikleri J Med Sci. 2005;25:663-668.
18. Azman AB, Sararaks S, Rugayah B, Low LL, Azian AA, Geeta S, Tiew CT. Quality of Life of the Malaysian General Population:

Results from a Postal Survey Using the SF-36. Med J Malaysia. 2003;58:694-711.

19. Jayasinghe U, W. Proudfoot J, Barton C A, Amorosa C, Holton C, Davies GP, Beilby J, Harris MF. Quality of life of Australian chronically ill adults: patient and practice characteristics matter, Health and Quality of Life Outcomes. 2009;7:1-11.
20. Abdo AA. Health-related quality of life of Saudi hepatitis B and C patients. Ann Saudi Med. 2012;32:397-340.
21. Eşer İ, Khorshıd L, Türk G. Evaluation of Life Qality in Patients with Hepatitis C. Viral Hepatit Dergisi 2006;11:41-45.
22. Karacaer Z, Cakir B, Erdem H, Ugurlu K, Durmus G, Koc Ince N, Ozturk C, Hasbun R, Batirel A, Mutlu Yilmaz E, Bozkurt I, Sunbul M, Aynioglu A, Atilla A, Erbay A, Inci A, Kader C, Tukenmez Tigen E, Karaahmetoglu G, Coskuner SA, Dik E, Tarakci H, Tosun S, Korkmaz F, Kolgelier S, Yilmaz Karadag F, Erol S, Turker K, Necan C, Sahin AM, Ergen P, Iskender G, Korkmaz P, Gulesen Eroglu E, Durdu Y, Ulug M, Deniz SS, Koc F, Alpat SN, Oztoprak N, Evirgen O, Sozen H, Dogan M, Kaya S, Kaya Ş, Altindis M, Aslan E, Tekin R, Sezer BE, Ozdemir K, Ersoz G, Sahin A, Celik I, Aydin E, Bastug A, Harman R, Ozkaya HD, Parlak E, Yavuz I, Sacar S, Comoglu S, Yenilmez E, Sirmatel F, Balkan II, Alpay Y, Hatipoglu M, Denk A, Senol G, Bitirgen M, Geyik MF, Guner R, Kadanali A, Karakas A, Namiduru M, Udurgucu H, Boluktas RP, Karagoz E, Ormeci N. Quality of life and related factors among chronic hepatitis B-infected patients: a multi-center study, Turkey, Health and Quality of Life Outcomes. 2016;14:153:1-10.
23. Chen YJ, Eyf W, Eph C, Chan AKC, Chan KHY, Tsang JPY, Lam CLK. The Health-Related Quality of Life of Chinese Patients on Hemodialysis and Peritoneal Dialysis. Patient. 2017;10:799-808.
24. Braga SF, Peixoto SV, Gomes IC, Acúrcio FA, Andrade EIG, Cherchiglia ML. Factors Associated with Health-related Quality of Life in Elderly Patients on Hemodialysis. Rev Saude Publica. 2011;45:1127-1136.
25. Gentile S, Beauger D, Speyer E, Jouve E, Dussol B, Jacquelinet C, Briançon S. Factors Associated with Health-Related Quality of Life in Renal Transplant Recipients: Results of a National Survey in France. Health and Quality of Life Outcomes. 2013;11:1-12.
26. Husky M.M, Farin FF, Compagnone P, Fermanian C, Kovess-Masfety V. Chronic back pain and its association with quality of life in a large French population survey. Health and Quality of Life Outcomes. 2018;16:195:1-9.
27. Strømnes L A, Ree H, Gjesdal K, Ariansen I, Sex Differences in Quality of Life in Patients with Atrial Fibrillation: A Systematic Review. Journal of the American Heart Association. 2019;8:1-16.
28. Can G, Can H, Yılmaz B et al. Assessment of Health related Quality of Life in Different Stages of Liver Disease in Patients with Chronic Hepatitis B and C, The Medical Journal of Mustafa Kemal University, 2016; 7(25): p:28-40.
29. Preto O, Amaral O, Duarte J, Chaves C, Coutinho E, Nelas P. Quality of life and chronic disease in patients receiving primary health care, 2nd International Conference on Health and Health Psychology, date of access: 03.10.2019, access address:https://core.ac.uk/download/pdf/80518331.pdf;217-226.
30. Alay H, Özden K, Erol S, Çelik N, Parlak E, Parlak M. Assessment of Quality of Life of Patients with Chronic Hepatitis B and C Treated with Pegylated Interferon-alpha. Viral Hepatitis Journal. 2018;24:25-42.