

# Assessment of Quality of Life Indicators of Patients with Cirrhosis of the Liver

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**Abstract** In order to assess the social environment, disease status, and quality of life indicators of patients with cirrhosis of the liver, an SF-36 survey proposed by the World Health Organization was used to determine the quality of life of 89 patients. The results obtained indicate a reliable difference in all scales of the SF-36 survey among individuals with liver cirrhosis and healthy. Thus, the quality of life data contribute to the individualization of the treatment program, determine its effectiveness and prognosis. To objectify the quality of life indicator, the testological approach has become widespread.

**Keywords** Cirrhosis of the liver, An indicator of quality of life, Indicator, Testological approach

## 1. Introduction

Quality of life is a construct that reflects the positive and negative aspects of an individual's life. This construct is expanded upon by health-related quality of life (HRQL), which includes health risks and conditions, functional status, social support, and socioeconomic status on individuals' well-being. Cirrhosis is the culmination of various pathways that can lead to the development of advanced hepatic fibrosis. These mechanisms include alcohol abuse, iron or copper overload, autoimmune liver diseases, biliary atresia, cystic fibrosis, and non-alcoholic fatty liver disease as well as chronic hepatitis B, chronic hepatitis C, and inborn errors of metabolism [1]. The most prevalent disease processes likely to result in cirrhosis in the United States include chronic hepatitis C virus (HCV), non-alcoholic fatty liver disease (NAFLD), and alcoholic liver disease (ALD) [2].

Thus, the quality of life data contribute to the individualization of the treatment program, determine its effectiveness and prognosis. To objectify the quality of life indicator, the testological approach has become widespread. The use of specially developed questionnaires allows patients to be drawn to the joint determination of treatment tactics with the doctor and creates favorable conditions for successful therapy. [3]. Among the general methods for assessing quality of life, the SF-36 Health Status Survey questionnaire proposed by the Boston Institute of Health (J. Ware) has gained wide acceptance and is the main one in the International Project for Assessing Quality of Life [4,5].

**Purpose of the study:** Assessment of the social environment, disease status and quality of life indicators of patients with

cirrhosis of the liver.

## 2. Material and Methods

From the medical cards of 89 patients treated in hospitals for the analysis of side diseases in patients (№025/U scale.) in his study of data on Anamnesis, attention was paid to the diseases he experienced, chronic diseases and foci of infectious diseases. Analysis of the disease was carried out according to the International Classification of diseases 10th revision, dividing them into classes and nosological forms.

One of the statistical methods of modern medicine in determining the social hygienic description of patients, risk factors and quality of life of the disease was the use of the phenomenon-control research method. In this case, data was collected using a questionnaire from 30 people of the same age living in Tashkent in a control group to compare the data of patients in the main group. Of the patients in the control group, 43 were female and 46 were male. The SF-36 survey proposed by the World Health Organization was used to determine the quality of life of those involved in the study. It is considered general and helps to assess the quality of life of patients with various diseases and compare these indicators with a healthy population. In addition SF-36 is compiled for adults, covering respondents aged 14 years or older. It is characterized by a high efficiency of the questionnaire, short length (consisting of 36 questions), ease of application.

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Quality of life assessment criteria under SF-36 survey:

1. Physical activity (RF)
2. The role of physical problems in the limitation of life activity (RR)

3. Pain (VR)
4. General health (GN)
5. Life activism (VT)
6. Social activism (SF)
7. The role of emotsios in the delimitation of life activity (RE)
8. Mental health (MH)

In the studied groups, Z-values were calculated on 8 indicators based on the formulas presented below, and the physical component of Health and mental components of Health were calculated.

Calculation of the Z-value on scales.

$$PF-Z = (PF - 84,52404) / 22,89490$$

$$RP-Z = (RP - 81,19907) / 33,797290$$

$$BP-Z = (BP - 75,49196) / 23,558790$$

$$GH-Z = (GH - 72,21316) / 20,16964$$

$$VT-Z = (VT - 61,05453) / 20,86942$$

$$SF-Z = (SF - 83,59753) / 22,37642$$

$$RE-Z = (RE - 81,29467) / 33,02717$$

$$MH-Z = (MH - 74,84212) / 18,01189.$$

Calculation of physical components of Health.

$$MHsum = (PF-Z^* -0,22999) + (RP-Z^* -0,12329) + (BP-Z^* -0,09731) + (SF^* 0,26876) + (MH-Z^* 0,48581) + (RE-Z^* 0,43407) + (VT-Z^* 0,23534) + (GH-Z^* -0,01571)$$

$$MH = (MHsum^* 10) + 50$$

Calculation of mental components of Health.

$$MHsum = (PF-Z^* -0,22999) + (RP-Z^* -0,12329) + (BP-Z^* -0,09731) + (SF^* 0,26876) + (MH-Z^* 0,48581) + (RE-Z^* 0,43407) + (VT-Z^* 0,23534) + (GH-Z^* -0,01571)$$

$$MH = (MHsum^* 10) + 50$$

The data obtained was processed statistically, calculating the mean values (M), the standard deviation ( $\sigma$ ) and the standard errors of the average value (m). To tolerate the reliability of the difference between the results, the Student-t criterion and  $\chi^2$  criteria were used. The difference between

the indicators was assessed as reliable at  $P < 0.05$ .

### 3. The Results Obtained and Their Discussion

Together with the hepatoprotector, a survey of SF-36 was carried out in all respondents before the appointment of a pazure table as well as a probiotic. The results obtained show that there is a reliable difference between individuals with cirrhosis of the liver and healthy in all scales of the SF-36 survey.

Preliminary data analysis on quality of life at the beginning of the study shows that the difference in indicators in comparative and experimental groups is correctly applied methods of their selection. It has been shown that the quality of life indicators of patients with cirrhosis of the liver are reliably different from healthy ones on all scales. It has been observed that the role of physical problems in life activity restriction (RR) is almost 3.5-fold lower in patients than healthy ones, the role of emotsios in life activity restriction (RE) is almost 3-fold, and social activity (SF) is 2-fold lower ( $p < 0.001$ ). It was observed that there are also significant differences between the physical and fungal components of Health.

It has been found that there is a moderately strong inverse correlation relationship between physical activity (RF) among healthy individuals, the role of physical problems in limited life activity (RR), overall health (GN) indicators, and their age ( $r = -0.56$ ). Patients with cirrhosis of the liver were also found to have a strong negative mean correlation ( $R = 0.49$ ). Patients were found to have a moderately strong inverse correlation relationship between the duration of the disease and the physical and mental components of Health ( $r = 0.62$  and  $R = 0.58$ , respectively). It has been found that the correlation relationship between disease rates and the physical and mental components of Health is  $r = -0.65$  and  $R = -0.61$ , respectively.

**Table 1.** Results from the SF-36 survey at the beginning of the study

№	Evaluation scales	Health (control group) (n=80)	People with cirrhosis of the liver (comparative group) (n=40)	Liver cirrhosis patients (experimental group) (n=40)
1	Physical activity (RF)	89,3±2,1	57,2±3,2***	56,8±3,1***
2	The role of physical problems in the limitation of life activity (RR)	82,2±1,9	23,8±2,6***	22,5±2,4***
3	Pain (VR)	88,6±3,0	50,7±3,4***	51,8±3,5***
4	General health (GN)	87,2±2,7	41,6±2,6***	40,8±2,5***
5	Life activism (VT)	78,6±2,8	50,5±3,2***	51,6±3,7***
6	Social activism (SF)	81,9±2,6	40,2±2,6***	41,3±2,7***
7	The role of emotsios in the delimitation of life activity (RE)	76,3±3,1	25,9±2,5***	27,6±2,6***
8	Mental health (MH)	80,2±2,9	50,3±3,4***	51,9±3,1***

Note. \* - the difference between the control group and the reliable: \* -  $p < 0,05$ , \*\* -  $p < 0,01$ , \*\*\* -  $p < 0,001$ ,

^ - the difference between the control group and the reliable: ^ -  $p < 0,05$ , ^^ -  $p < 0,01$ , ^^ -  $p < 0,001$ .

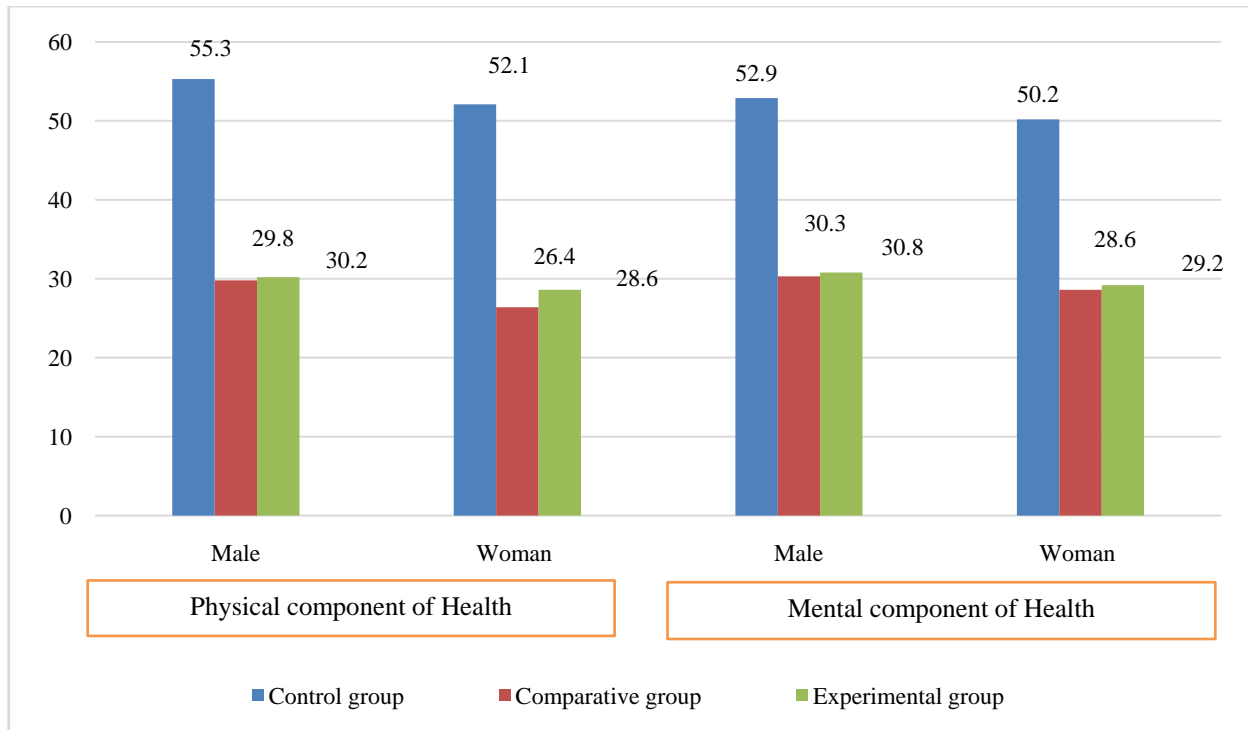


Figure 1. Gender-based health components of groups

Table 2. Pre-and post-research results on the criteria of the SF-36 survey

№	Groups	Physical activity (RF)	The role of physical problems in the limitation of life activity (RR)	Pain (VR)	General health (GN)	Life activism (VT)	Social activism (SF)	The role of emotions in the delimitation of life activity (RE)	Mental health (MH)
1	Control group	before	89,3±2,1	82,2±1,9	88,6±3,0	78,6±2,8	81,9±2,6	76,3±3,1	80,2±2,9
		then	88,7±2,0	81,8±1,9	89,7±3,2	77,5±2,7	80,6±2,5	78,2±3,2	79,7±2,8
2	Comparative group	before	57,2±3,2	23,8±2,6	50,7±3,4	50,5±3,2	40,2±2,6	25,9±2,5	50,3±3,4
		then	58,9±2,9	27,6±2,8	54,3±3,6	53,7±3,4	45,7±2,8	29,5±2,7	55,6±3,6
3	Experimental group	before	56,8±3,1	22,5±2,4	51,8±3,5	51,6±3,7	41,3±2,7	27,6±2,6	51,9±3,1
		then	64,8±2,5*	29,7±2,6*	62,8±3,7*	56,5±3,8	53,4±2,9**	35,5±2,9*	63,8±3,2**

Note. \* - the difference between the study received and subsequent indicators is reliable: \* -  $p < 0,05$ , \*\* -  $p < 0,01$ , \*\*\* -  $p < 0,001$

When we analyzed the quality of life indicators between the sexes, it was not found that there was a statistically reliable difference, although the physical and mental components of Health were observed to be slightly higher in men than in women (Figure 1).

During the study, patients in the experimental group were advised to add a probiotic "BST" to the diet table in combination with a hepatoprotector. The SF-36 survey was reevaluated to assess changes in quality of life 30 days after patients began receiving hepatoprotectors and probiotic "BST".

The results obtained indicate that there was almost no change in the control group indicators (Table 2).

As can be seen from Table 2 control group indicators the results obtained at the end of the study were hardly different from the indicators received by the study. In the comparative group, on the other hand, it received research, and although

the indicators at the end changed slightly for the better, it did not differ statistically reliably.

In the experimental group, the indicators of life activity (VT) did not differ statistically reliably, despite the improvement. Indicators of physical activity (RF), the role of physical problems in life activity limitation (RR), pain (VR), general health (GN), and the role of emotions in life activity limitation (RE) varied statistically reliably ( $p < 0.05$ ). The social activity (SF) index was 41.3 before the study, compared to 53.4 (29.3% increase) at the end of the study, while mental health (MH) increased from 51.9 to 63.8 (22.9%) ( $p < 0.01$ ).

From the results thus obtained, it can be concluded that patients with cirrhosis of the liver have low quality of life indicators compared to healthy people. Even after treatment, the change in these indicators was not clearly reflected.

## 4. Conclusions

Patients with cirrhosis of the liver were also found to have a strong negative mean correlation ( $R=0.49$ ). Patients were found to have a moderately strong inverse correlation relationship between the duration of the disease and the physical and mental components of Health ( $r=0.62$  and  $R=0.58$ , respectively). It has been found that the correlation relationship between disease rates and the physical and mental components of Health is  $r=-0.65$  and  $R=-0.61$ , respectively.

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