# Status of Health related Quality of life between HBV and HCV Patients of Pakistan

Masood Sarwar Awan and Muhammad Waqas and Mumtaz Ali and Muhammad Amir Aslam

Department of Economics, University of Sargodha, Pakistan

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Masood Sarwar Awan
Assistant Professor Department of Economics, University of Sargodha, Pakistan.
E.mail: awan811@hotmail.com


Muhammad Waqas
Graduate Student Department of Economics, University of Sargodha, Pakistan.
E.mail: economist147@hotmail.com


Mumtaz Ali
Assistant Professor Department of Social Work, University of Sargodha, Pakistan.
E.mail: mumtazali@uos.edu.pk


Muhammad Amir Aslam
Probation Officer, District Courts Sargodha. Punjab Home Department, Pakistan
E.mail: amir_aslam22@yahoo.com

**Abstract**
The aim of the study is to explore the factors those differentiate health related quality of life (HRQOL) among hepatitis B (HBV) and hepatitis C (HCV) patients. Different public and private hospitals of Sargodha district were visited and 120 patients of hepatitis B and C were interviewed. World health related quality of life-BREF (WHOQOL-BREF) questionnaire was used to construct HRQOL instrument. Multiple regression analysis was performed to observe the collision of demographic, medical, economic and physical and psychological factors on patients HRQOL. Results showed that HBV patients enjoyed better HRQOL then HCV patients. 86.4% HCV patients faces death threat while, 67.3% HBV faces this threat. 93.5% HBV patients feels depression while, 97.8% HCV patients feels depression. Urban patients HRQOL scores were superior then rural patients in both HCV and HBV case. Moreover, male patients HRQOL scores were better as compared to female patients. Age of the patient, disease severity, use of drug, pain, depression, financial hindrance and threat of death negatively influence the HRQOL of both HBV and HCV patients while, vaccination, income, sleep, opportunity of leisure and better living condition were positively related to HRQOL.
**Key words: HRQOL; Sargodha; HBV; HCV; Pakistan**

## 1, Introduction
Development of medicine protracted the life of many people with chronic diseases. Disease may perhaps not kill the patient but they upset the social and economic condition. In modern health care health-related quality of life (HRQOL) has achieved much more importance. It is essential to know how patient feels about his social, economic, and physical and psychosocial life. HRQOL is an important tool for appraising the burden of disease on patient's life. Hepatitis is a viral disease, more generally it is inflammation of the liver. Hepatitis is due to viruses, which are A, B, C, D and E. Hepatitis may be in sensitive or in chronic form. Loss of appetite, nausea, low fever, abdominal pain,

vomiting, yellowing of skin, fatigue, whites of the eyes are the main warning symptoms of hepatitis. Hepatitis can be spread due to insecure injections practice and blood transfusion, unfair sexual relations, poor hygienic and living conditions, impure water and food usage, poor sanitary and drainage system, excessive use of alcohol etc.

Quality of life is an umbrella; it comprise all healthy features of patient's life like physical health, financial well-being, relationships to family and friends, work capacity and leisure. Hepatitis is one of the diseases that hurt the HRQOL of suffers. With the passage of disease time period, this disease snatch the umbrella of quality of life from patient. Patient feels death threat, no opportunity of leisure, and his physical, mental and economic condition become verse ever.

Depression, fatigue, joint pain, disease severity and depression affect hepatitis B (HBV) patients HRQOL, while disease severity and depression diminished hepatitis C (HCV) patients HRQOL (Gutteling et al. 2006). HRQOL was decreased due to poor illness and depression in HCV patients (Gallegos et al. 2003). Sex, age, disease severity, causes of liver disease and social class had no affect on hepatitis patients HRQOL, but anxiety and depression reduced patients HRQOL (Hauser et al. 2004).

An estimated 102,813 people died due to HBV and 53769 died due to HCV all over the world. In Pakistan HBV and HCV causes the deaths of 2340 and 945 people respectively every year (World Life Expectancy, 2009). In 2007-08, 0.8% people were diagnosed with hepatitis in Sargodha district (MICS, 2007-08), which is the eight largest district of Punjab. In overall Punjab 0.7% people were diagnosed with hepatitis. Among all the districts situation of hepatitis in Sargodha district is also worse (See figure 1).

Many studies in Pakistan, investigated the determinants that affect HRQOL of hepatitis patients, but few studies explore the difference of HRQOL in the patients of HBV and HCV. The purpose of this study is to highlight a comparison of HRQOL in the patients of HBV and HCV in Sargodha district. This study will also explore how demographic, economic, medical physical and psychological factors affect patients of HBV and HCV differently.

The rest balance of paper is designed as: part two explains about the HRQOL instrument, part three discusses the literature review, part four explains the data and methodology; part five investigates and interprets the empirical results. Finally, part six presents the conclusions and also provides some policy implications.


**2, Health-related quality of life instrument**

HRQOL is a wide concept which represents that how the disease affect the patient's physical, psychological, social and environmental health. Disease severity, age, disease treatment etc affect patient's HRQOL. The purpose of the medicine is to cure the patient from disease and its symptoms. Patient's well-being is an important aspect of health care and assessment of HRQOL will help in focusing the different aspects of health care. WHO developed WHOQOL-100 questionnaire for the assessment of patient's HRQOL. Out of 236 questions, 100 questions were selected after conducting a pilot project. This questionnaire consists on six domains namely, physical, psychological, and level of independence, environment, social relationships and spirituality. Then SF-36 was developed because WHOQOL-100 requires lot of time. SF-36 is the short form of WHOQOL-100 and consists on 36 questions. The main drawback of this questionnaire is

that it is failed to incorporate a sleep variable. Therefore, WHOQOL-BREF questionnaire was developed. It is consist on 26 questions and four domains namely, physical, psychological, social relationships and environment. Physical domain discovers that how the bodily pain, medication, sleeps, energy and work are disturbing the life of patient. Psychological domain explores that how positive or negative feelings, happiness, person's expectation about themselves and his bodily look affect his mental health. Disease will definitely affect the patient's economic condition. Social relationships domain observes how patient's family, friends and relatives give support to him. Environmental domain observes the feelings of a patient about his financial position, life security, and place of living, leisure opportunity and learning of new skills (WHOQOL-BREF, 2004).

## 3, Literature Review

Different studies conducted surveys to examine the impact of hepatitis on quality of life and efficiency of patients. Atiq et al. (2004) investigated that chronic liver disease caused significant impairment in quality of life instrument in Pakistani patients. The survey was consisted on 56 patients and it is identified that chronic liver disease was caused due to hepatitis C virus (HCV) in 52 out of 56 patients. Lam et al (2009) probed that HBV affect HRQOL negatively. The study used the information of 520 Southern Chinese patients of HBV. SF-36v2 and CLDQ questionnaires were used for the data collection. Results of multiple regression analysis illustrated that Biomarkers such as Alanine Aminotransferase (ALT) and Aspartate Aminotransferase (AST) had no affect on HRQOL. Taking anti-viral treatment had no affect on mental component summary score (MCS). Anti-viral drug treatment reduced HRQOL initially and improved after abolition of virus. Females have lower HRQOL score as contrasted to males. Cirrhosis was most notably negatively related with HRQOL.

Marchesini et al. (2001) strived to discover factors allied with poor health status by using the data of 544 patients in Italy. The study used SF-36 and Nottingham health profile questionnaire and concluded that psychosocial factors affect HRQOL. Logistic regression results proved that all domains of HRQOL distorted in cirrhosis mostly in younger. Factors like muscle pain and disease severity were the liable for deprived health.

Sobhonslidsuk et al. (2006) used SF-36 and CLDQ to investigate the causative factors of HRQOL. For this rationale 250 patients of Thailand were interviewed. Multiple regression results explored that old age, low socio-economic status, female sex; stages of liver disease were the factor that diminishes HRQOL of patients. Perception of good health improves the HRQOL despite the periods of liver disease.

The Study of Bondini et al. (2007) using multiple regression and variance analysis concluded that HBV patients have superior HRQOL than HCV and PBC patients. This study contrasted the HRQOL between 146 patients of HBV, HCV and Primary biliary cirrhosis (PBC) from USA by using three questionnaires, chronic liver disease questionnaire (CLDQ), short form 36 (SF-36) and health utility index (HUI Mark 2 and 3). Overall utility scores of HBV patients were lesser than population norms in this study. Gutteling et al. (2006) used linear regression analysis by using DF-6D weighted utility score and liver disease symptom index 2.0 and demonstrated that depression, fatigue, joint pain, decreased appetite and disease severity determine HRQOL of HBV patient.

Disease severity and depression were the determinants of HCV that were negatively allied to HRQOL. The study surveyed 1175 patients of Netherlands and highlighted the determinants that effect HRQOL.

Gallegos et al. (2003) tried to investigate the HRQOL, depression and sickness in HCV patient without interferon therapy. For this purpose 157 patients were interrogated in which 112 were females and 45 were males. SF-36 questionnaire was used for the determination of HRQOL instrument, while depression was investigated by using Zung self-rating depression scale and illness was determined through self-applied knowledge test. Results indicated that HRQOL was diminished in HCV patients. 92 patients had depression which affect the HRQOL instrument negatively, while 114 patients had poor illness, which also affect HRQOL negatively.

Hauser et al. (2004), through multiple regression analysis found that cause of liver disease, disease severity, sex, age and social class had no effect on HRQOL but anxiety and depression affect this instrument. This study interviewed 255 patients and used certain questionnaires like socio-demographic questionnaire of the competence network Bowel disease, morbidity list of the German pain questionnaire, German version of the hospital anxiety and depression scale, SF-36 and CLDQ.

## 4, Data and Methodology

Among all types of hepatitis, HBV and HCV affect the patient life more severely. HBV virus is 50-100 times more dangerous than HIV. HBV may be cause of the liver cancer while, HCV contaminate the liver cells. An estimated 53769 people all over the world are affected with HCV. This study interviewed only HBV and HCV patients by visiting both private and public hospitals of Sargodha district. WHOQOL-BREF questionnaire, along with other questions was fallowed and 120 hepatitis patients were interviewed. To identify the impact of HBV and HCV on the HRQOL of patient, linear multiple regression analysis was performed under four separate models. First model will explore the impact of economic variables on HRQOL in the patients of HBV and HCV. Second, third and fourth model will identify the impact of demographic, medical and psychosocial variables on HRQOL of HBV and HCV patients.

## 5, Results and Discussion

120 patients were interviewed in which 55 patients were caught by HBV while, 65 patients were hit by HCV. 45.5 percent patients of HBV were male and 54.5 were female, while for HCV patients 54.5 were male and 44.6 were female. Percentage of male patients was high in HCV and percentage of female was high in HBV.

Among total HBV patients, 49.1 percent lived in rural and 50.9 lived in urban areas, while for HVC patients 50.8 percent belonged to rural and 49.2 percent belonged to urban areas.

The percentage of patients lived in airy houses was high in HCV disease case but in case of HBV most of the patients lived in closed houses. Mostly patients were married in both HBV and HCV case. The education level of HBV patients was high than HCV patients. 38.5 percent patients of HCV never attended school, while only 9.1 percent HBV patients never attended the school. The percentage of smokers was high in HCV patients, of which 40 percent were smokers. The sewerage system facilities were poor for the patients

of HCV than HBV. The huge percentage of both patients used the drinking water form the other sources like, form hand pump or motor outside from the house etc. Mostly the patients were workers, while in HBV the percentage of student patients was very high than HCV patients (see table 1).

Diseases not only affect the outer condition of the patient but it also affects its physiological and mental health. Following table shows that HBV patients' percentage was high as compared to HCV patients but 97% of HCV patients feel depression but this percentage was low in HBV patients. Threat of death was also high in HCV patients which show that HCV is more death able as compared to HBV. The patients have low opportunity of leisure and they were not satisfied to their living conditions (see table 2).


**5.1, Health Related Quality of Life Scores**

HRQOL instrument contains collective share of all four domains. Each item has an equal share in domain score. In questionnaire some items were positively and some were negatively framed. Negatively framed items were be recoded during the construction of HRQOL instrument and its domains. To explore the difference of HRQOL score among patients, instrument was converted into 0-100 range. 0 means the death of HRQOL and 100 means that patient is enjoying full HRQOL (WHOQOL-BREF, 2004) .

HRQOL instrument consist on four domains Physical, Psychological, Environmental and social relationship. Both the patients of HBV and HCV have highest score in social relationship domain. It illustrate that neither HBV nor HCV affect the social relationship of the patient severely. But as compared to HCV the patient of HBV social relationships were in better condition. Physical, Psychological and environmental summary shows that HBV patients were in better condition as compared to HBV patients. HRQOL instrument has a range of 0-100. Zero means death of HRQOL and 100 means that patient enjoy full quality of life in the presence of disease. Mean HRQOL of HVC patients were 43.22 which was lower than the HRQOL score of HBV patients. Over all comparatively HBV patients enjoyed better HRQOL (see table 3).

The results of mean values of HRQOL and its four domains of HBV patients, shows that in all domains and in HRQOL instrument male patients are enjoying better life than female patients. Moreover, if we see the maximum scores than again male patients are in better condition as compared to female (see table 4).

Rural HBV patients are in worse condition as compared to urban patients. Mean scores of rural patients are much lower then urban patients. There is a large gap in environmental domain scores, where mean score of rural patients is 29.51 and mean score of urban patients is 56.47. It shows that there is a big difference in the environmental facilities for rural and urban patients (see table 5).

In case of HCV patients males are also enjoying better HRQOL then female patients. Previous results also showed the same trend, where male HBV were in better condition as compared to female HBV patients (see table 6).

Out of total HCV patients, 32 patients belongs to rural areas while, 33 patients are from urban areas. If we see the discrimination of HRQOL in rural and urban patients then we come to know that urban patients are in better condition as compared to rural patients

with HCV. Mean scores for urban patients are high in all respects. Same was the result for HBV urban patients (see table 7).

## 5.2, Multiple Regression Results

After discussing the descriptive results of our survey, multiple regression analysis was performed under four models, demographic model, medical model, economic model and physical and psychological model. The dependant variable is HRQOL and independent variables are gender, age of the patient, region, disease severity vaccination and use of drugs. Results show that all the variables are highly significant except gender and vaccination in the case of HCV. All the signs are according to expectations. In demographic and medical model, HBV patients model have better $R^2$ as compared to HCV patients model. Age of the patient, disease severity and use of drugs are negatively significant related to HRQOL in both HBV and HCV models. Magnitude of disease severity and age of the patient is high for HBV patients as compared to HCV patients. Positive sign of male shows that if a male is a patient of HBV he have better HRQOL then females and negative sign of male under HCV model shows that male patients HRQOL is worse then females.

The results of economic and physical and psychological models show that financial hindrances decrease the HRQOL of the patient. In the case of HBV patients its magnitude is high then HCV patients. Depressed person have a worse HRQOL and in case of HCV patients its magnitude is higher then HBV patients. Moreover, pain and death threat also decrease the HRQOL and better sleep, better living condition and opportunity of leisure increases HRQOL of patient. Again in both regressions analysis HBV patients' models have better $R^2$ then HCV models (see table 8).

## 6, Conclusions

The intention of this study is to see the sights that whether HRQOL is better in HBV patients or in HCV patients. 120 patients of hepatitis B and C were interviewed from Sargodha district. WHOQOL-BREF questionnaire was used to build HRQOL instrument. Results demonstrated that HBV patients have better HRQOL then HCV patients. 86.4% HCV patients faces death threat while, 67.3% HBV faces this threat. Moreover, multiple regression results showed that age of the patient, disease severity, use of drug, pain, depression, financial hindrance and threat of death negatively affect the HRQOL of both HBV and HCV patients. In the case of HBV patients' variable financial hindrances magnitude was high then HCV patients. Depressed person have a worse HRQOL and in case of HCV patients its magnitude is higher then HBV patients.

Vaccination, income, sleep, opportunity of leisure and better living condition were positively related to HRQOL. The study gives several suggestions on the basis of present analysis. With the advancement of medical technologies the treatment also should focus on those aspects that increase patients HRQOL, like by giving the opportunity of leisure to patients their HRQOL may be maximized. Giving them the financial assistance will also help in removing their financial hindrances. Government and concerning authorities should focus on controlling drugs among the people. Death threat and depression may be control by teaching the patients and by giving them cognitive behavioural therapy.

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**APPENDIX**
**Acronyms**
Health-related quality of life (HRQOL)
Hepatitis B (HBV)
Hepatitis C (HCV)
Chronic liver disease questionnaire (CLDQ)
World health quality of life Bref (WHOQOL-BREF)
Multiple indicator cluster survey (MICS)
Medical outcome study (MOS)
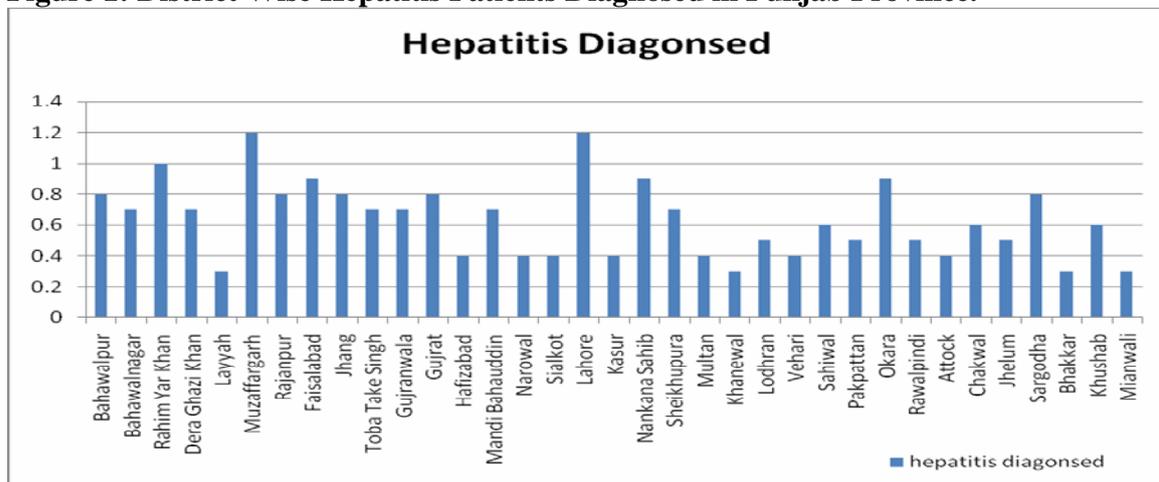World Health Organization (WHO)
Short form-36 (SF-36)
Health utility index (HUI)
Alanine Aminotransferase (ALT)
Aspartate Aminotransferase (AST)

**Figure 1: District Wise Hepatitis Patients Diagnosed in Punjab Province.**



Source: MICS

2007-08

**Table 1: Descriptive Statistics.**

| VARIABLES | PERCENTAGE | |
|---|---|---|
| | **HBV** | **HCV** |
| **Gender** | **100.0** | **100.0** |
| Male | 45.5 | 55.4 |
| Female | 54.5 | 44.6 |
| **Region** | **100.0** | **100.0** |
| Rural | 49.1 | 50.8 |
| Urban | 50.9 | 49.2 |
| **Type of houses** | **100.0** | **100.0** |
| Airy | 36.4 | 72.3 |
| Closed | 63.6 | 27.7 |
| **Marital status** | **100.0** | **100.0** |
| Married | 80.0 | 84.6 |
| Unmarried | 12.7 | 12.3 |
| Divorced | 1.8 | 1.5 |
| Separated | 1.8 | 1.5 |
| **Education** | **100.0** | **100.0** |
| Never attended school | 9.1 | 38.5 |
| Primary level | 12.7 | 9.2 |
| Middle level | 21.8 | 12.3 |
| Metric level | 21.8 | 10.8 |
| Inter level | 7.3 | 15.4 |
| Bachelor level | 16.4 | 10.8 |
| Masters and above | 10.9 | 3.1 |
| **Type of drugs** | **100.0** | **100.0** |
| Smoking | 36.4 | 40.0 |
| Drinking | - | - |
| drug through injections | - | - |
| **Use no drugs** | 63.6 | 60.0 |
| **Vaccination** | **100.0** | **100.0** |

| | | |
|---|---|---|
| Yes | 14.5 | 35.4 |
| No | 85.5 | 64.6 |
| **Sewerage system** | **100.0** | **100.0** |
| Underground | 45.5 | 32.3 |
| Open system | 32.7 | 53.8 |
| **No sewerage system** | 21.8 | 13.8 |
| **Source of Drinking water** | **100.0** | **100.0** |
| Piped | 34.5 | 32.3 |
| Open well | 7.3 | 16.9 |
| Others | 58.2 | 50.8 |
| **Patient's Occupation** | **100.0** | **100.0** |
| Work | 47.3 | 48.5 |
| Student | 14.5 | 3.1 |
| Housewife | 32.7 | 30.8 |
| Idle | 5.5 | 16.9 |
| **Patient's Employment Sector** | **100.0** | **100.0** |
| Agriculture sector | 3.6 | 4.6 |
| Manufacturing  sector | 7.3 | 4.6 |
| Construction  sector | 7.3 | 3.1 |
| Transport  sector | 10.9 | 7.7 |
| Social services  sector | 14.5 | 15.4 |
| others  sector | 3.6 | 13.8 |

**Table 2: Physical and Psychosocial Conditions of HBV and HCV Patients.**

| Physical and Psychosocial Variables | | | | |
|---|---|---|---|---|
| **HBV** | | | **HCV** | |
| | **N** | **Percentage** | **N** | **Percentage** |
| **Pain** | 55 | 96.4% | 65 | 90.8% |
| **Depression** | 55 | 93.5% | 65 | 97.8% |
| **Sleep** | 55 | 52.7% | 65 | 53.8% |
| **Death threat** | 55 | 67.3% | 65 | 86.4% |
| **Opportunity of leisure** | 55 | 29.1% | 65 | 66.2% |
| **Living condition** | 55 | 65.5% | 65 | 55.4% |

**Table 3: Health Related Quality of Life Scores of HBV and HCV Patients.**

| Health related quality of life scores | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **HBV** | | | | **HCV** | | | |
| | **N** | **Max.** | **Min.** | **Mean** | **N** | **Max.** | **Min.** | **Mean** |
| **Physical health domain** | 55 | 85.71 | 7.14 | 42 | 65 | 78.57 | .0 | 36.86 |
| **Psychological health domain** | 55 | 95.83 | 25 | 53.71 | 65 | 83.33 | 4.17 | 39.80 |
| **Social relationship domain** | 55 | 100 | .00 | 63.93 | 65 | 100 | 16.67 | 58.78 |
| **Environmental domain** | 55 | 87.50 | 9.38 | 43.23 | 65 | 71.88 | 3.13 | 37.45 |
| **HRQOL instrument summary** | 55 | 82.78 | 24.37 | 50.72 | 65 | 78.91 | 10.53 | 43.22 |

**Table 4: HBV Patients Health Related Quality of Life Scores by Gender.**

| HBV Patients Health related quality of life scores | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Male** | | | | **Female** | | | |
| | **N** | **Max.** | **Min.** | **Mean** | **N** | **Max.** | **Min.** | **Mean** |
| **Physical health domain** | 30 | 85.71 | 7.14 | 43.69 | 25 | 78.57 | 14.29 | 40.00 |
| **Psychological health domain** | 30 | 95.83 | 29.17 | 55.00 | 25 | 83.33 | 25.00 | 52.16 |
| **Social relationship domain** | 30 | 100.00 | 33.33 | 67.50 | 25 | 91.67 | .00 | 59.66 |
| **Environmental domain** | 30 | 87.50 | 9.38 | 44.89 | 25 | 87.50 | 9.38 | 41.25 |
| **HRQOL instrument** | 30 | 82.78 | 24.37 | 52.77 | 25 | 82.40 | 26.79 | 48.27 |

**Table 5: HBV Patients Health Related Quality of Life Scores by Region.**

| HBV Patients Health related quality of life scores | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Rural** | | | | **Urban** | | | |
| | **N** | **Max.** | **Min.** | **Mean** | **N** | **Max.** | **Min.** | **Mean** |
| **Physical health domain** | 27 | 78.57 | 7.14 | 34.12 | 28 | 85.71 | 14.29 | 49.61 |
| **Psychological health domain** | 27 | 83.33 | 29.17 | 46.91 | 28 | 95.83 | 25.00 | 60.26 |
| **Social relationship domain** | 27 | 83.33 | 12.50 | 60.64 | 28 | 100.00 | .00 | 67.11 |
| **Environmental domain** | 27 | 62.50 | 9.38 | 29.51 | 28 | 87.50 | 9.38 | 56.47 |
| **HRQOL instrument** | 27 | 74.85 | 25.22 | 42.80 | 28 | 82.78 | 24.37 | 58.36 |

**Table 6: HCV Patients Health Related Quality of Life Scores by Gender.**

| HCV Patients Health related quality of life scores | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Male** | | | | **Female** | | | |
| | N | Max. | Min. | Mean | N | Max. | Min. | Mean |
| **Physical health domain** | 36 | 78.57 | .00 | 38.88 | 29 | 64.29 | .00 | 34.35 |
| **Psychological health domain** | 36 | 83.33 | 12.50 | 41.66 | 29 | 66.67 | 4.17 | 37.50 |
| **Social relationship domain** | 36 | 100.00 | 16.67 | 59.72 | 29 | 100.00 | 16.67 | 57.61 |
| **Environmental domain** | 36 | 71.88 | 6.25 | 38.28 | 29 | 62.50 | 3.13 | 36.42 |
| **HRQOL instrument** | 36 | 78.91 | 10.53 | 44.63 | 29 | 69.35 | 14.25 | 41.47 |

**Table 7: HCV Patients Health Related Quality of Life Scores by Region.**

| HCV Patients Health related quality of life scores | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Rural** | | | | **Urban** | | | |
| | N | Max. | Min. | Mean | N | Max. | Min. | Mean |
| **Physical health domain** | 32 | 78.57 | .00 | 35.04 | 33 | 75.00 | .00 | 38.63 |
| **Psychological health domain** | 32 | 66.67 | 16.67 | 38.67 | 33 | 83.33 | 4.17 | 40.90 |
| **Social relationship domain** | 32 | 100.00 | 25.00 | 57.81 | 33 | 100.00 | 16.67 | 59.72 |
| **Environmental domain** | 32 | 62.50 | 3.13 | 35.74 | 33 | 71.88 | 6.25 | 39.10 |
| **HRQOL instrument** | 32 | 69.64 | 17.82 | 41.81 | 33 | 78.91 | 10.53 | 44.59 |

**Table 8: Multiple Regression Results.**

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| DEMOGRAPHIC MODEL | | |
|---|---|---|
| | **HBV** | **HCV** |
| **Constant** | 63.72** | 63.31** |
| **Gender** Male=1, Female=0 | 4.86 | -1.57 |
| **Age of the patient** | -0.67** | -0.58** |
| **Region** Urban=1, Rural=0 | 14.34** | 4.0 |
| **$R^2$** | 0.39 | 0.17 |
| **F-Statistics** | 7.56 | 5.55 |
| **SER** | 10.87 | 8.64 |
| MEDICAL MODEL | | |
| **Constant** | 55.53** | 49.5** |
| **Disease severity** | -5.95** | -0.31* |
| **Vaccination** Yes=1, No=0 | 23.53* | -4.75 |
| **Use of drug** Yes=1, No=0 | -5.05* | -6.17* |
| **$R^2$** | 0.35 | 0.22 |
| **F-Statistics** | 20.21 | 32.69 |
| **SER** | 4.28 | 5.63 |
| ECONOMIC MODEL | | |
| **Constant** | 55.28** | 29.21* |
| **Income** | 0.001* | 0.001* |
| **Financial hindrances** Yes=1, No=0 | 13.87* | -6.08* |
| **$R^2$** | 0.29 | 0.10 |
| **F-Statistics** | 6.39 | 8.21 |
| **SER** | 3.33 | 3.69 |
| PHYSICAL AND PSYCHOLOGICAL MODEL | | |
| **Constant** | 58.51** | 59.76** |
| **Pain** Yes=1, No=0 | -11.80 | -7.02* |
| **Depression** Yes=1, No=0 | -4.04* | -14.82* |
| **Sleep** Satisfied=1, Dissatisfied=0 | 9.46** | 11.56** |
| **Living condition** Satisfied=1, Dissatisfied=0 | 8.62** | 8.15** |
| **Death threat** Yes=1, No=0 | -11.81** | -10.76* |
| **Opportunity of leisure** Yes=1, No=0 | 10.41** | 10.53** |
| **$R^2$** | 0.68 | 0.63 |
| **F-Statistics** | 5.64 | 7.93 |
| **SER** | 10.28 | 9.81 |
| **=1% significance level    *= 5% significance level | | |