Quality of Life and Associated Factors in Patients Infected with Hepatitis B and C Virus in a Moroccan Region: A Cross-Sectional Study

Diagne Bineta Jho¹, Abid Hakima², Ibtissam El Harch¹, Soumaya Benmaamar¹, Bourkhime Hind¹, Bahra Nassiba¹, Baldé Mamadou Saliou³, Condé Passy¹, Nada Otmani¹, Mohammed El Abkari², Mohamed Amine Berraho¹, Nabil Tachfouti¹, Samira El Fakir¹

¹Laboratory of Epidemiology, Clinical Research and Community Health Faculty of Medicine and Pharmacy, Fez, Morocco
²Hepatogastroenterology Department, Hassan II University Hospital Center, Fez, Morocco
³Hemodialysis Nephrology Department, Donka University Hospital Center, Conakry, Guinea

Email: *dbinetajho@gmail.com

Abstract

Introduction: Hepatitis B or C virus infection is one of the most common liver infections leading to altered health-related quality of life (HRQoL) in patients. The goal of this study was to assess the quality of life of patients infected with hepatitis B or C virus and to determine the factors that might be associated with worse outcomes. Methods: A cross-sectional study was conducted in patients aged 18 years and over followed on an outpatient basis at the teaching hospital Hassan II in Fez for hepatitis B or C. These patients were asked to complete the SF-12 questionnaire file which is the short form of the quality measurement scale of life SF-36. Sociodemographic, clinical and economic information was collected. A descriptive analysis was carried out, then a univariate analysis in search of factors associated with quality of life, and finally a multivariate analysis by linear regression was carried out adjusting for possible confounding factors.

Results: A total of 94 patients whose mean age was 55.69 ± 13.25 years met the inclusion criteria. The physical quality of life was altered with an average of 41.98 ± 12.67. Hepatitis C virus infection ($\beta = −6.802, 95\% \text{ CI} = (−12.05; −1.55)$), cirrhosis ($\beta = −6.947, 95\% \text{ CI} = (−12.04; −1.84)$) and lack of employment ($\beta = −8.48, 95\% \text{ CI} = (−13.18; −3.77)$) were the factors associated with poor quality of life. The mental quality of life (MCS) was also altered with an average of 46.32 ± 12.84. In multivariate analysis we found that participants with hepatitis C ($\beta = 7.444, 95\% \text{ CI} = (2.14; 12.74)$), unemployed ($\beta = 6.697, 95\% \text{ CI} (2.28; 11.11)$) and having received treatment ($\beta = 8.295, 95\% \text{ CI} (2.95; 13.63)$) had a better mental quality of life, while alcoholics had an impaired mental quality of life ($\beta = −8.105, 95\% \text{ CI} (−15.28; −0.92)$).

Conclusion: Quality of life is altered in patients...
with chronic hepatitis regardless of type.

**Subject Areas**

Epidemiology, Gastroenterology & Hepatology, Psychiatry & Psychology, Public Health

**Keywords**

Quality of Life, Chronic Hepatitis, Hepatitis B Virus, Hepatitis C Virus, SF12, Health-Related Quality of Life, Morocco

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1. Introduction

Hepatitis B and C are viral infections that can become chronic and cause liver cancer or even death [1]. The prevalence of HBV is 5.4% worldwide compared with 3% for HCV [2]. In Morocco, this prevalence is 1.66% for HBV and 1.93% for HCV [3] [4].

Health-related quality of life (HRQoL) has recently become an important outcome of clinical research [5]. In addition to clinical and economic data, it has proven useful in better managing patients and providing information to health-care decision-makers. Although “quality of life” is difficult to define precisely, the term “health-related quality of life” focuses on self-perceived health and well-being in the domains of physical functioning, somatic sensations, state physiological, social interactions, functional capacity and feeling of well-being influenced by the state of health [6].

Over the past two decades, HRQoL has become an important outcome indicator for chronic diseases. A number of studies have shown impaired quality of life in patients with chronic liver diseases including viral hepatitis, cirrhosis, cholestatic liver and hepatocellular carcinoma (HCC) [7] [8].

Although the majority of patients with chronic hepatitis C (CHC) are asymptomatic, numerous extrahepatic manifestations, such as fatigue, anorexia, myalgia, arthralgia, irritability, and headache, can lead to impaired daily quality of life [9]. On the other hand, there have been few studies on patients with hepatitis B, and those that have been carried out suggest a normal or almost normal quality of life in patients infected with the hepatitis B virus (HBV) [7] [10].

In the Moroccan context, few studies inform us about the impact of chronic viral hepatitis on the quality of life of patients.

The aim of this study was to evaluate the quality of life of patients infected with HBV and HCV and to determine the factors associated with its alteration.

2. Patients and Methods

2.1. Study and Population

This was a cross-sectional study with a total of 94 participants followed in hepato-
ology consultation for chronic viral hepatitis B or C at the diagnostic center of the Hassan II university hospital in Fez from October 2019 to December 2020. Patients aged of 18 and over, followed for hepatitis B or C were included in the study. Were excluded all participants who consulted for other pathologies and carriers of a psychiatric disorder before the diagnosis of the disease.

2.2. Data Collection

After obtaining approval from the Ethics Committee of the Hassan II University Hospital in Fez, all the subjects were informed of the conditions related to the study; and have given their informed consent in writing. Anonymity and confidentiality were respected for all participants. Data were collected using a pre-established questionnaire including socio-demographic variables: age, gender, residence, marital status, educational level, occupation, monthly income, smoking status, alcohol and substance consumption, as well as clinical variables: medical and surgical history, treatment, complications and risk factors.

2.3. Measure of Quality of Life

The quality of life was measured using the SF-12 scale which is the abbreviated version of the SF-36 scale, developed and analyzed by John Ware et al. [11]. The SF12 has been validated in the Moroccan dialect allowing its use to assess the state of health of the population [12]. This 12-point questionnaire makes it possible to study two scores describing mental well-being (the summary of the mental component-MCS) and physical well-being (the summary of the physical component-PCS) [13], these scores are between 0 and 100 and the higher scores indicate a better quality of life. It consists of eight areas:

- **Physical health (PCS)**
  - Physical functioning (PF)
  - Role-physical (RP)
  - Bodily pain (BP)
  - General health (GH)
- **Mental health (MCS)**
  - Vitality (VT)
  - Social functioning (SF)
  - Role-emotional (RE)
  - Mental health (MH)

2.4. Statistical Analysis

We did a descriptive study of all the variables; Frequencies were used for categorical variables. Means and standard deviations were used for quantitative variables. The study of the link between the different factors and the quality of life score was carried out using the Student test. We did multiple linear regression to determine factors associated with poor quality of life in our patients. Factors with p-value ≤ 0.2 in bivariate analysis were included in the model. The signifi-
cant association was presented using the adjusted beta ($\beta$) and its 95% confidence interval. The significance threshold was set at 5%. Data were entered into excel 10 software and data were exported and analyzed with the spss.21 software.

3. Results

Sociodemographic and clinical characteristics of patients with chronic hepatitis

Ninety-four (94) patients including 67 (71.3%) with hepatitis B and 27 (28.7%) with hepatitis C were included in the study. The proportion of men and women was equal and the mean age of the patients was 55.69 years (SD = 13.25). The mean duration of HBV or HCV infection was 7.22 years (SD = 5.63). At least one comorbidity was found in 46 patients (49.5%), 40.9% of patients had a complication and the most common was cirrhosis (37%). 66 (71.7%) benefited from antiviral treatments, the main modes of transmission of the virus were dental care (40.9%) and risky sexual behavior (10.6%).

Statistical analysis of sociodemographic and clinical characteristics between patients with hepatitis B and C showed significant differences for the following variables: age ≥ 50 years, profession, comorbidities, treatment and complications. Patients with hepatitis B or C were elderly subjects (p = 0.002) (socio-demographic and clinical characteristics are indicated in Table 1).

Quality of life

Physical health (PCS)

The PCS was altered with an average of 41.98 ± 12.67. The role physical (RP) was the most affected with an average of 38.89 ± 13.83 followed by the general health (GH) 40.17 ± 15.11 (Table 2). The univariate analysis showed that the deterioration of the physical quality of life was significantly associated with low level of education (p = 0.003), low monthly income (p = 0.000), HCV (p = 0.007), the presence of comorbidities and complications with respectively (p = 0.013 and 0.000), absence of jobs (p = 0.000) and treatment (p = 0.001) (Table 3). In multivariate analysis, we found that cirrhosis: $\beta = −6.947; 95\%$ CI (−12.04; −1.84), HCV: $\beta = −6.283; 95\%$ CI (−12.05; −1.55) and absence of employment: $\beta = −8.480; 95\%$ CI (−13.18; −3.77) were negatively associated with the physical component of quality of life (Table 4).

Mental health (MCS)

The MCS was altered with an average of 46.32 ± 12.84. Vitality was the most altered followed by the role emotional with an average of 27.62 ± 0.0012 and 37.10 ± 14.27 respectively (Table 2). Impaired mental quality of life was associated with age ≥ 50 (P = 0.003), having an occupation (p = 0.0001), having HBV (p = 0.001), no of comorbidities and complications with respectively (p = 0.049 and 0.001), single people (p = 0.053), alcohol abuse (P = 0.042), literate people (p = 0.029), and lack of treatment (p = 0.001) (Table 3). In multivariate analysis, the factor negatively associated with MCS in our patients was alcohol consumption with $\beta = −8.105; 95\%$ CI (−15.28; −0.92), on the other hand we found that
Table 1. Sociodemographic and clinical characteristics of patients with hepatitis B and C.

| Variables                        | All patient N (%) | HVB (n = 67) | HVC (n = 27) | P    |
|----------------------------------|-------------------|--------------|--------------|------|
| **Age (Mean ± SD) (n = 94)**     | 55.69 ± 13.25     | 51.76 ± 12.28| 65.44 ± 10.34| 0.002|
| ≥50                              | 65 (69.1)         | 40 (59.7)    | 25 (92.6)    |      |
| <50                              | 29 (30.9)         | 27 (40.3)    | 2 (7.4)      |      |
| **Gender (n = 94)**              |                   |              |              | 0.111|
| Females                          | 47 (50)           | 30 (44.8)    | 17 (63)      |      |
| Males                            | 47 (50)           | 37 (55.2)    | 10 (37)      |      |
| **Residency (n = 94)**           |                   |              |              | 0.374|
| Rural                            | 23 (24.7)         | 18 (27.3)    | 5 (18.5)     |      |
| Urban                            | 70 (75.3)         | 48 (72.7)    | 22 (81.5)    |      |
| **Profession (n = 93)**          |                   |              |              | 0.000|
| Employed                         | 34 (36.6)         | 33 (50)      | 1 (3.7)      |      |
| Unemployed                       | 59 (63.4)         | 33 (50)      | 26 (96.3)    |      |
| **Education Level (n = 94)**     |                   |              |              | 0.086|
| Educated                         | 58 (61.7)         | 45 (67.2)    | 13 (48.1)    |      |
| Uneducated                       | 36 (38.3)         | 22 (32.8)    | 14 (51.9)    |      |
| **Marital Status (n = 94)**      |                   |              |              | 0.163|
| Single /Divorced/Widowed         | 19 (20.2)         | 16 (23.9)    | 3 (11.1)     |      |
| Married                          | 75 (79.8)         | 51 (76.1)    | 24 (89.9)    |      |
| **Monthly Income (Dh)**          |                   |              |              | 0.349|
| ≥2000                            | 51 (55.4)         | 34 (52.3)    | 17 (63)      |      |
| <2000                            | 41 (44.6)         | 31 (47.7)    | 10 (37)      |      |
| **Assurance (n = 94)**           |                   |              |              | 1.000|
| Uninsured                        | 1 (1.1)           | 1 (1.5)      | 0 (0.0)      |      |
| Assured                          | 93 (98.9)         | 66 (98.5)    | 27 (100)     |      |
| **Life (n = 94)**                |                   |              |              | 0.670|
| Alone                            | 6 (6.4)           | 5 (7.5)      | 1 (3.7)      |      |
| As a family or as a couple       | 88 (93.6)         | 62 (92.5)    | 26 (96.3)    |      |
| **Alcohol (n = 90)**             |                   |              |              | 0.718|
| Yes                              | 80 (88.9)         | 8 (12.5)     | 2 (7.7)      |      |
| No                               | 10 (11.1)         | 56 (87.5)    | 24 (92.3)    |      |
| **Smoking (n = 93)**             |                   |              |              | 0.864|
| No                               | 70 (75.3)         | 50 (75.8)    | 20 (74.1)    |      |
| Yes                              | 23 (24.7)         | 16 (24.2)    | 7 (25.9)     |      |
| **Disease Duration (Mean ± SD)** | 7.22 ± 5.63       | 7.77 ± 6.12  | 5.93 ± 4.07  | 0.508|
| ≤5 ans                           | 39 (42.9)         | 26 (40.6)    | 13 (48.1)    |      |
| >5 ans                           | 52 (57.1)         | 38 (59.4)    | 14 (51.9)    |      |
| **Family Background of HBV or HCV** |                   |              |              | 0.138|
| Yes                              | 17 (18.3)         | 15 (22.4)    | 2 (7.7)      |      |
| No                               | 76 (81.7)         | 52 (77.6)    | 24 (92.3)    |      |
Continued

| Comorbidity       | Yes | No    | p-value |
|-------------------|-----|-------|---------|
|                   | 46 (49.5) | 27 (40.3) | 19 (73.1) | 0.005 |
|                   | 47 (50.5) | 40 (59.7) | 7 (26.9)  | |

| Complications     | Yes | No    | p-value |
|-------------------|-----|-------|---------|
|                   | 38 (40.9) | 19 (28.8) | 19 (70.4) | 0.000 |
|                   | 55 (59.1) | 47 (71.2) | 8 (29.6)  | |

| Cirrhosis         | Yes | No    | p-value |
|-------------------|-----|-------|---------|
|                   | 34 (37) | 17 (26.2) | 17 (63)  | 0.001 |
|                   | 58 (63) | 48 (73.8) | 10 (37)  | |

| Others Complications | Yes | No    | p-value |
|----------------------|-----|-------|---------|
|                      | 24 (26.1) | 11 (16.9) | 13 (48.1) | 0.000 |
|                      | 68 (73.9) | 54 (83.1) | 14 (51.9) | |

| Transmission of Virus Blood Transfusion | Yes | No    | p-value |
|----------------------------------------|-----|-------|---------|
|                                        | 7 (7.4) | 6 (9.1) | 1 (3.8)  | 0.066 |
|                                        | 85 (90.4) | 60 (90.9) | 25 (96.2) | |

| Tattoo                     | Yes | No    | p-value |
|----------------------------|-----|-------|---------|
|                            | 3 (3.2) | 1 (1.5) | 2 (8)  | 0.178 |
|                            | 89 (96.7) | 66 (98.5) | 23 (92) | |

| Risk Sexual Behavior      | Yes | No    | p-value |
|----------------------------|-----|-------|---------|
|                           | 10 (10.6) | 7 (11.5) | 3 (13)  | 1.000 |
|                           | 54 (88.5) | 20 (87)  |          | |

| Dental Care               | Yes | No    | p-value |
|----------------------------|-----|-------|---------|
|                            | 38 (40.9) | 55 (59.1) |          | |
|                            | 23 (34.3) | 15 (57.7) | 0.040   | |
|                            | 44 (65.7) | 11 (42.3) |          | |

| Treatment                 | Yes | No    | p-value |
|----------------------------|-----|-------|---------|
|                           | 66 (71.7) | 39 (60) | 27 (100) | 0.000 |
|                           | 26 (28.3) | 26 (40) | 0 (0.0)  | |

**Table 2.** Components of the SF-12.

| Variables                     | Mean ± SD       |
|-------------------------------|-----------------|
| **PCS**                       |                 |
| Physical Functioning (PF)     | 42.75 ± 12.67   |
| Role-Physical (RP)            | 38.89 ± 13.83   |
| Bodily Pain (BP)              | 42.80 ± 15.06   |
| General Health (GH)           | 40.17 ± 15.11   |
| **MCS**                       |                 |
| Vitality (VT)                 | 27.62 ± 0.00012 |
| Social Functioning (SF)       | 41.95 ± 13.45   |
| Role-Emotional (RE)           | 37.10 ± 14.27   |
| Mental Health (MH)            | 41.84 ± 15.97   |

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Table 3. Factors associated with PCS and MCS: result of univariate analysis.

| Variable               | PCS          | P     | MCS          | P     |
|------------------------|--------------|-------|--------------|-------|
| Age                    | 0.156        | 0.003 | 0.156        | 0.436 |
| ≥50                    | 40.74 ± 13.08|       | 48.91 ± 12.30|       |
| <50                    | 44.77 ± 11.42|       | 40.51 ± 12.29|       |
| Gender                 |              |       |              |       |
| Males                  | 43.85 ± 11.61| 0.251 | 45.28 ± 10.37| 0.436 |
| Females                | 40.12 ± 13.52|       | 47.36 ± 14.95|       |
| Residency              |              |       |              |       |
| Rural                  | 41.89 ± 13.19| 0.983 | 46.54 ± 14.68| 0.944 |
| Urban                  | 41.82 ± 12.58|       | 46.32 ± 12.37|       |
| Profession             |              | 0.000 |              | 0.001 |
| Employed               | 48.64 ± 9.26 |       | 40.72 ± 8.83 |       |
| Non-employed           | 38.15 ± 12.95|       | 49.46 ± 13.83|       |
| School Level           |              |       |              |       |
| Educated               | 45.14 ± 11.54| 0.003 | 43.81 ± 10.17| 0.015 |
| Uneducated             | 36.90 ± 12.91|       | 50.36 ± 15.56|       |
| Marital Status         |              |       |              |       |
| Married                | 41.38 ± 12.84| 0.359 | 47.70 ± 12.42| 0.053 |
| Single/Widowed/divorced| 44.38 ± 12.02|       | 40.85 ± 13.33|       |
| Monthly Income (Dh)    |              | 0.000 |              | 0.068 |
| ≥2000 dh               | 46.68 ± 10.53|       | 43.93 ± 10.90|       |
| <2000 dh               | 36.67 ± 13.06|       | 48.85 ± 14.62|       |
| Life                   |              |       |              |       |
| Alone                  | 46.62 ± 10.95| 0.358 | 40.73 ± 11.80| 0.273 |
| As a family or as a couple | 41.67 ± 12.77 |       | 46.70 ± 12.88|       |
| Alcohol                |              |       |              |       |
| Yes                    | 46.29 ± 10.56| 0.192 | 39.26 ± 11.32| 0.042 |
| No                     | 41.28 ± 12.87|       | 47.79 ± 12.44|       |
| Smoking                |              | 0.607 |              | 0.622 |
| No                     | 41.42 ± 12.74|       | 46.86 ± 12.99|       |
| Yes                    | 42.99 ± 12.47|       | 45.359 ± 12.42|      |
| Hepatitis Type         |              | 0.007 |              | 0.000 |
| HCV                    | 36.54 ± 13.17|       | 53.48 ± 12.89|       |
| HBV                    | 44.18 ± 11.87|       | 43.43 ± 11.72|       |
| Disease Duration       |              | 0.086 |              | 0.494 |
| ≤5 ans                 | 43.93 ± 12.02|       | 45.52 ± 11.66|       |
| >5 ans                 | 39.27 ± 13.44|       | 47.42 ± 14.72|       |
Continued

| Variables       | Adjusted β (CI 95%) | P-value |
|-----------------|---------------------|---------|
| Comorbidity     | 0.013               | 0.049   |
| Yes             | 38.57 ± 13.00       | 49.08 ± 14.43 |
| No              | 45.06 ± 11.61       | 43.81 ± 10.66 |
| Complication    | 0.000               | 0.001   |
| Yes             | 36.08 ± 12.28       | 51.37 ± 11.57 |
| No              | 46.39 ± 11.09       | 42.63 ± 12.58 |
| Cirrhosis       | 0.000               | 0.000   |
| Yes             | 35.52 ± 12.35       | 52.17 ± 11.35 |
| No              | 46.22 ± 11.12       | 42.44 ± 12.35 |
| Other Complication | 0.024            | 0.029   |
| Yes             | 37.49 ± 11.92       | 50.50 ± 10.57 |
| No              | 44.14 ± 12.29       | 44.45 ± 13.23 |
| Treatment       | 0.001               | 0.000   |
| Yes             | 39.82 ± 12.98       | 48.96 ± 12.40 |
| No              | 49.96 ± 8.72        | 38.70 ± 10.04 |

**Table 4.** Factors associated with the PCS: result of the multivariate analysis by multiple linear regression.

patients with HCV $\beta = 7.444; 95\%$ CI $(2.14; 12.74)$, the unemployed $\beta = 6.697; 95\%$ CI $(2.28; 11.11)$ and those who received $\beta$ treatment $= 8.295; 95\%$ CI $(2.95; 13.63)$ were factors positively associated with MCS (Table 5).

4. Discussions

We did a cross-sectional study on the quality of life of patients with chronic viral hepatitis of two etiologies, HBV and HCV. We found impairment in the quality of life in these patients and this impairment was both physical and mental, our results are in agreement with previous studies which reported that the quality of life was more deteriorated in patients with chronic liver disease compared to healthy people [14] [15] [16] [17]. Many studies have shown that the physical
Table 5. Factors associated with MCS: results of multivariate analysis by multiple linear regression.

| Variables          | Adjusted β (CI 95%) | P-value |
|--------------------|---------------------|---------|
| **Profession**     |                     | 0.003   |
| Unemployed         | 6.697 (2.28; 11.11) |         |
| Employed           | Reference           |         |
| **Alcohol**        |                     | 0.027   |
| Yes                | −8.105 (−15.28; −0.92) |       |
| No                 | Reference           |         |
| **Type of Hepatitis** |                   | 0.006   |
| HCV                | 7.444 (2.14; 12.74) |         |
| HBV                | Reference           |         |
| **Treatment**      |                     | 0.003   |
| Yes                | 8.295 (2.95; 13.63) |         |
| No                 | Reference           |         |

component is more impaired than the mental component of quality of life in chronic liver disease [18] [19] [20], which agrees with our results where we found a physical component more impaired than the mental component, the same result was reported by N Svirtlih et al. [21]. This result could be explained by the fact that we excluded from our study all patients followed or treated for psychiatric disorders before the diagnosis.

Cirrhosis was a factor negatively associated with poor physical (PCS) and mental (MCS) quality of life, this result could be explained by the fact that the clinical progression of chronic liver disease mainly affects the physical dimension of quality of life with the mental dimension spared [22] [23] also in our results the elderly subjects had a more altered physical component than the mental one and the cirrhotics were mostly elderly subjects (data not shown) and age can be considered as a factor of deterioration of the physical state in these people, the association between cirrhosis and the deterioration of the quality of life has been reported in several studies [24] [25] [26] [27]. Our results agree with those of N Svirtlih et al. [21].

Hepatitis type was significantly associated with poor quality of life, in our study we found HCV to be a significant negative predictor of physical component (PCS) and patients with HBV had a significant reduction in mental component (MCS) of the quality of life, Foster et al. found that even in the absence of medical complications, patients with HCV had a significant reduction in both components of quality of life compared to the general population and patients with chronic hepatitis B had only a reduction significant of the mental component which is in agreement with our results [7]. It has been explained that HCV causes physical symptoms that reduce quality of life in patients [7]. Our results agree with most of the studies that report an impaired quality of life in HCV.
compared to HBV [7] [28], however there have been few studies on patients with HBV, and those that have been carried out suggest a normal or nearly normal quality of life in patients infected with hepatitis B virus [7] [10]. Our results are different from those of N Svirtlih et al. who found no significant association in mental and physical scores between HCV and HBV patients [21], while Ozcan M et al. found that HCV and HBV had significant reductions in both quality of life components [29].

In our study, patients who received antiviral treatment had a significant alteration of the two components of the QoL with a PCS more altered than the MCS. In multivariate analysis by linear regression we found that the treated patients had a better mental QOL, this is due to the fact that the treatment gives hope of recovery to these patients which could explain this improvement in the mental component. Foster G.R et al. in their study on the QOL and side effects of treatment in HCV had reported that at the start of antiviral treatment the QOL was altered [30], but an improvement was noted after eradication of the virus [17] [31]. Elegance TP Lam et al. found that antiviral treatment had a negative impact on the MCS score of SF-36 in HBV [32].

No significant association was found between the components of SF-12 (PCS and MCS) and certain sociodemographic parameters such as gender, marital status and disease duration, the same result was reported by Häuser W et al. [33], Popović Dušan D et al. also found no correlation between disease duration and SF-36 components [34].

In addition, we found that alcohol consumers had a good score for the physical component, this association was not significant, however the mental component was significantly altered and in multivariate analysis, the fact of consuming alcohol had a negative impact. On the MCS, Popović Dušan D et al. found that alcohol consumers had a better score for the physical component [34].

The occupation was a factor associated with the alteration of QOL and the unemployed had a significantly more altered PCS than the MCS unlike those with a job, after doing the multiple linear regression, we found that the absence of employment was a negative predictor of PCS but not of MCS. This result is consistent with that of Popović Dušan D et al. who concluded in their study that employment was a significant predictor of physical and non-mental components [34].

The limitation of this study is that it was a cross-sectional study conducted in a single region of Morocco and which did not take into account the healthy population as a control, the study was also limited by the small sample size which is not representative of the population which could increase the risk of errors in our results. Another limitation of the study is that we did not take into consideration the type of antiviral treatment, some studies report that interferon-based drugs negatively affect quality of life. The psychological aspect was also not taken into account in this study, as well as the different stages of the disease. A study with a larger sample size or even multicentric study would be desirable, thus making it possible to evaluate the HRQoL in chronic liver diseases.
5. Conclusion

In this cross-sectional study of the evaluation of the quality of life of patients with hepatitis B or C, we found that the health-related quality of life was altered in these patients regardless of the type of hepatitis while highlighting the associated factors, and taking these factors into account means improving the quality of life of this population. But it is necessary to make a thorough study of these factors associated with the quality of life.

Conflicts of Interest

The authors declare no conflicts of interest.

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