Assessment of quality of life in hepatitis B patients compared with healthy people

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Abstract: The life quality in patients with hepatitis B is considered as a major concern in these patients. The aim of this study was to analyze the regression model of the life quality in patients with hepatitis B in comparison with healthy people from Mazandaran province.This cross sectional-descriptive study was carried out on 420 cases on two groups: hepatitis B chronically-infected patients and healthy peoples from six regions of Mazandaran province. The method of sampling was convenience in two groups. Measuring the quality of life carried out according to the world health organization questionnaire (WHOQOL-BREF). Data analysis was consisted of multiple regression method and for comparison one-sample test of Kologroph- Smirnoph was used.Statistical analysis showed that the average of public life quality in patients with hepatitis B was weak (1<1.76<5) and in healthy people was evaluated average (1<2.94<5). According to results, fully integrated of the care program of these patients in network system, easy access and facilitating in intervention to improve the life quality is offered.
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1. Introduction

The scope of the quality of life assessment is not widespread in any time like today. Economists, social scientists and politicians look at this topic from the particular approach [1, 2, 3]. The indicators of life quality include the large range from food and clothing to health care and social- physical environment [4]. Although the life quality has been translated to life level in some resources, but life level and material development includes only one of the basics of life quality[5]. In fact, the concept of life quality is a composite variable that is influenced by several variables [6]. Despite different definitions of life quality, there has not been a consensus regarding the definition to enfold the various aspects of this concept. The World Health Organization (WHO) defines quality of life as; "Individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns[7]. Currently, the scope of life quality and its assessment in chronic diseases have been studied widely. In chronic disease, the main purpose of health care monitoring and treatment is life satisfaction and well-being feeling. However, the life quality of patients with chronic hepatitis B is often below the normal range[8]. Studies showed that with the progression of liver disease and ineffective anti-viral treatment, the physical and mental health of patients damage increasingly[9, 10]. These patients suffer from fatigue, loss of confidence, inability to work, anxiety, depression and other emotional problems that reduce severely their life quality[11]. According to results from previous studies and agreement about the reducing of life quality with regards to disease progression [20,21], however, in this study in terms of the cultures and value systems, the life situations have different goals, expectations, standards and priorities that is not clear with others. Therefore, current investigations have been compared the life quality of two groups of patients and healthy peoples with the new approach by public questionnaires with statistical methods. Perhaps research about the life quality at the group of patients in different situations leads to modern steps to compare with mathematical techniques to solve medicine problems and other problems. Quality of life is measured with likert scale in different area, but last studies showed that the score of quality life in some area is not acceptable. Therefore, non liner regression based on discrete-descriptive should be used. Thus, the aim of this study was analyzing of dimension of the life quality at patients with hepatitis B in comparison with healthy people using multiple regression in the Mazandaran province.

2. Material and Methods

This cross sectional- descriptive study included 420 individuals in two groups: healthy peoples (210person) that referred to health centers for another reasons and hepatitis B chronic patients (210person) who were passed six months from their first refer to urban and rural health care centers that

now are inactive from 6 regions of Mazandaran province in2011: Sari, Neka, Ghaemshahr, Amol, Tonekabon and Noor. The method of sampling was convenience in two groups. All studied groups were over 18 years old. In this study World health organization quality of life (WHOQOL) instrument was used. It is consist on 26 questions and four domains namely, physical, psychological, social relationships and environment. This study was performed with analysis hierarchical multiple regression (AHP). Two special specifications of multiple regression analysis (the mean estimation of "regression weights") and measuring of the "Barazesh model" were use for the analysis of quality. In this survey, firstly of all the independent variables were scored, and secondly, their proportional share estimated in dependent variables, then the score of each independent variable was done according to its effect on the dependent variable. These numerical values are called "regression weights" or efficiencies. Finally, after standardization of scores or efficiencies, ranking of independent variables were compared with each other[12].The experimental model of the measuring of life quality contains the hierarchical structures: criteria, sub- criteria and effective criteria in the process of measuring of life quality which make different levels of this model[13]. This model has been described in three levels. The first level is the life quality. The second level consists of 4 criteria including: physical health, mental health, social relations and environment health and the third level of the model is the analyzing of more sub-criteria . For analyzing of data, the multiple regressions and for comparing results the one-sample test of Kologroph-Smirnoph have been used.

3. Results

According to findings which were obtained from one-sample T test, the average of public life quality in patients with hepatitis B was weak (1<1.76<5) and in healthy people was evaluated as average (1<2.94<5). Also, for comparing the score average of life quality at six cities, one-sample test of Kologroph- Smirnoph was used. Mental health domain in second level for patients group was lower than other sub-criteria (1<1.40<5), on the other hand, in healthy people group, the environment health domain was lower than other sub- criteria (1<2.46<5).

4. Discussions

HBV leads to cirrhosis in up to 20% of those chronically infected and is a one of the most common indications for liver transplantation worldwide. This economic burden is compounded by the significant impact of HBV on health- related quality of life (HRQOL) resulting from complications of advanced liver disease, such as encephalopathy, variceal hemorrhage, ascites, and liver transplantation. After statistical analysis on quality of life in two groups, the mean of life quality and its domains in two groups in table 1 at two level and criteria ranking at table 2 and the mean of life quality of sub criteria in comparison form presented in table 3. According to results quality of life in patients with hepatitis B was weak (1<1.76<5) but at healthy people was average (1<2.94<5) that significant differences is between healthy people and patient group. This result is similar to Meltem study. In his study performed on 131 patients with HBV showed that the scores of life quality in patients in comparison with the control group were lower than healthy people. According to the study results, the authors reported that HBV carriers had significantly higher levels of depression and anxiety and lower level of functioning when compared with healthy controls [15]. Niederaun and his colleagues stated that the life quality of in patients with chronic hepatitis C (especially in treated patients with interferon) was lower than the normal range, and quality of life as well as mental health damage have been increasingly seen according to the progression of liver disease and ineffective antiviral treatment [16]. In the sub- criteria at the second level of patients group, mental health was lower than other sub-criteria (1<1.40<5); on the other hand, in healthy group, the environmental health was lower than other sub criteria (1<2.46<5). Bernstein hypothesized that attention to life quality was the main concerns of chronic hepatitis patients and patient care should be propelled to maintain life quality such as the ability to maintain the job and relationship with family and friends, and to continue their happiness and enjoyment of pleasant situation[17].

As shown in the table 2, the impact coefficient (β) of life quality for patient group was 0.253. Sub-criteria of the second level in this group which were effective on life quality included: mental health, social relations, and physical and environment health with impact factors (coefficient) of 0.272, 00. 0.244 and 0.242, respectively. Furthermore, Sub- criteria of the second level in the healthy group included mental health, social relations, and physical and environment health with impact factors (coefficient) of 0.558, 0.550, 0.537 and 0.438 respectively. In a previous study carried out by Ghanbariet al., age, gender, AST, clinical symptoms, mental and physical health were effective on life quality with β factors: 0.33, 0.18, 0.19, 0.35, 0.14 and 0.15, respectively. But physical health as an interface factor changes 95% of life quality score and mental health change it 78%. In total, 58% of changes in life quality fit with this model.

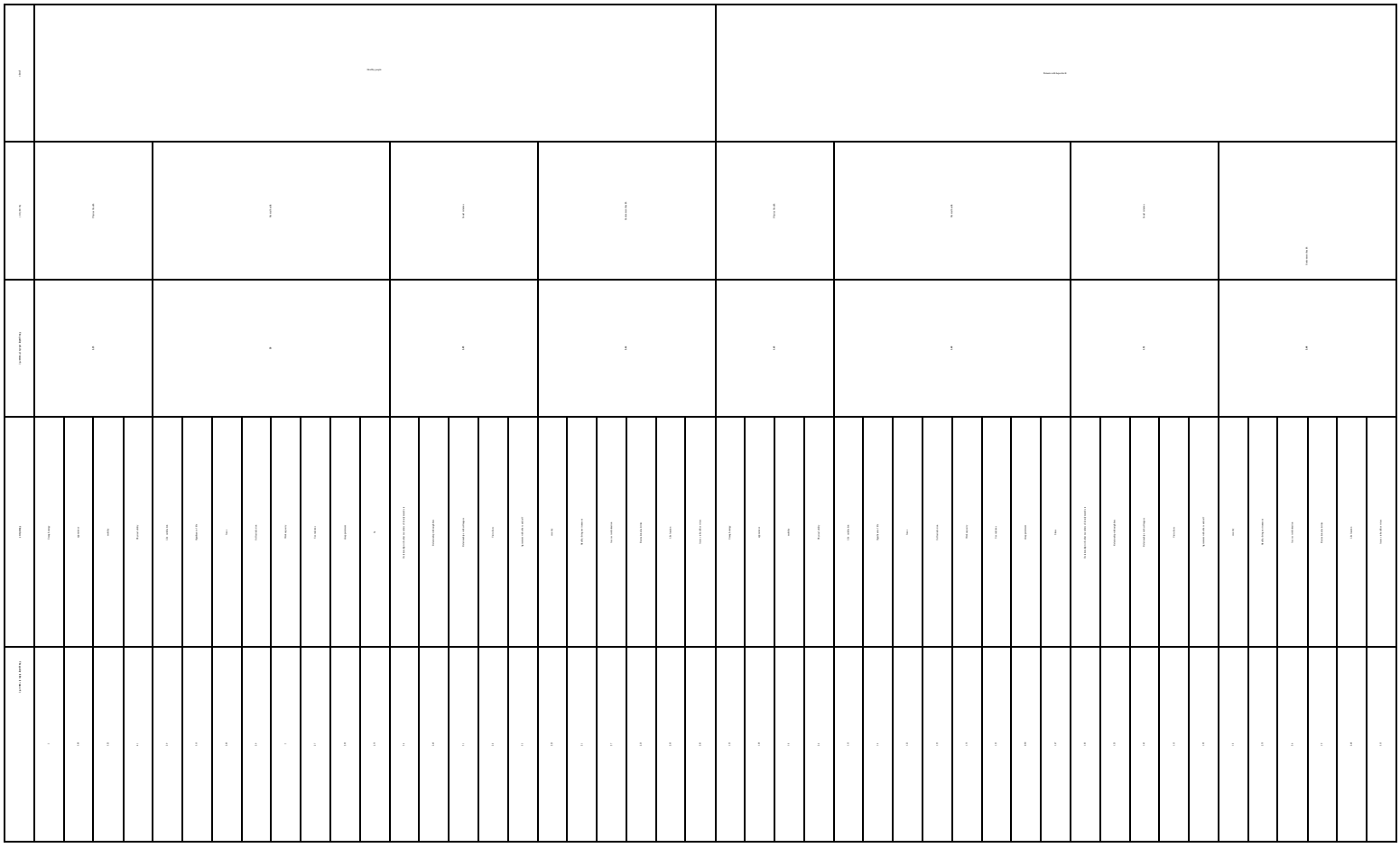
Table 1: The situation of life quality between hepatitis B patients and healthy people as criteria of the first and second levels

Groups	First level	The quality of life (1<mean<5)	Second level	Life quality (1<mean<5)
Patients with hepatitis B	The quality of life	1.76	Physical health	1.65
			Mental health	1.40
			Social relations	1.53
			Environment health	2.48
Healthy people	The quality of life	2.94	Physical health	3.35
			Mental health	2.9
			Social relations	3.05
			Environment health	2.46

Table2: β Coefficient of the importance of criteria and sub- criteria of hepatitis B patients and healthy people at the third and second levels.

Groups	First level	β coefficient	Second level	β coefficient
Patients with hepatitis B	The quality of life	0.253	Physical health	0.244
			Mental health	0.272
			Social relations	0.254
			Environment health	0.242
Healthy people	The quality of life	0.532	Physical health	0.537
			Mental health	0.550
			Social relations	0.558
			Environment health	0.483

Table 3: Situation of quality of life in hepatitis B patients compared with healthy people as criteria and sub-criteria of second and third levels.



The important issue arose from these results indicated that the disease associated with the impact factor (coefficient) of 0.36 had more effect on mental health in comparison with other independent variables and clinical symptoms (with 0.35 of the impact coefficients has a direct effect on life quality). Physical health and health with 0.15 and 0.14 of the impact coefficients, respectively affected the life quality[18]. In some studies on quality of life, the effective variables were individual features and diseases[19], however, in this study, we did not include those issues as we were not ascertain about the stage of chronic disease in Patient group.

In the end, sub- criteria of third level in hepatitis patients, disappointment with average (1<0.9<5) and environmental health with (1<2.1<5) in healthy people were the lowest level of life quality. Generally, according to findings quality of life in hepatitis patients is lower than healthy people and also, mental health in hepatitis patients is more important than social relations in healthy peoples. So, managers should be aware about promotion of life quality by good program and intervention with every group to prepare the appropriate level of life quality. All together, increasing the number of samples together with application of other interventions with comprehensive designation, the quality of these studies will be increased. One of the main steps for improving the quality of life of these patients is incorporation of patients cares in Primary health care (PHC) system.

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